VIDE-V27609

Service Manual

ViewSonic VG175

Model No. VLCDS21833-1

17.4" Color TFT LCD Display

(VA800_SM_144 - Rev. 1 – October 2000)

ViewSonic® 381 Brea Canyon Road, Walnut, California 91789 USA - (800) 888-8583

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FCC INFORMATION
This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause unacceptable interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures -- reorient or relocate the receiving antenna; increase the separation between equipment and receiver; or connect the into an outlet on a circuit different from that to which the receiver is connected.

FCC WARNING
To assure continued FCC compliance, the user must use a grounded power supply cord and the provided shielded video interface cable with bonded ferrite cores. Also, any unauthorized changes or modifications ~~to Amtrak products~~ will void the user's authority to operate this device. Thus ViewSonic Corporation will not be held responsible for the product and its safety.

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CE CERTIFICATION
This device complies with the requirements of the EEC directive 89/336/EEC with regard to "Electromagnetic compatibility."

SAFETY CAUTION
Use a power cable that is properly grounded. Always use the AC cords as follows – USA (UL); Canada (CSA); Germany (VDE); Switzerland (SEV); Britain (BASEC/BS); Japan (Electric Appliance Control Act); or an AC cord that meets the local safety standards.

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SPECIFICATIONS

Characteristic	Description
LCD Panel	17.4 inch diagonal viewable screen, Anti-glare MVA TFT Active Matrix Panel, 0.270 mm pixel pitch.
Typical Viewing Angles	Horizontal : 160º Vertical : 160º
Signal Input	Video : RGB analog, 0.7 Vp-p, 75 ohms Sync : H/V separate or composite sync, TTL Horizontal : 30~82 kHz Vertical : 50~75 Hz
Connector	15 Pin Mini D-Sub (dual)
Maximum Resolution	1280 x 1024
Video Bandwidth	135 MHz nominal
Display Area	345.6mm (H) x 276.5mm (V)
Power Voltage	81~264Vac @ 47 ~ 63 Hz (auto switch)
Power Consumption	65 W max.
Operating Conditions	Temperature : 32 to 104 (0 to 40) Humidity : 5% to 95% (no condensation) Altitude : To 10,000 feet
Storage Conditions	Temperature : -4 to +140 (-20 to +60) Humidity : 5% to 95% (no condensation) Altitude : To 40,000 feet
Dimensions	Physical : 460.0mm (W) x 460.0mm (H) x 240.0mm (D)
Weight	8.5 kg

ON SCREEN DISPLAY

The OSD (On Screen Display) function is supported and controlled by four easy to use buttons – 1, Select (▼ / ▲), 2, Power.

Menu	Sub-Function	Value
Video Source		1 ~ 2
Auto Contrast		
Contrast		Adjustment Bar
Brightness		Adjustment Bar
Viewmatch Color	Preset 1	
	Preset 2	
	Red	Adjustment Bar
	Green	Adjustment Bar
	Blue	Adjustment Bar
LCD Adjust	PC / MAC	PC / MAC
	H Size	Adjustment Bar
	H-Position	Adjustment Bar
	V-Position	Adjustment Bar
	Fine Tune	Adjustment Bar
	Auto-sync	
Language	English	
	Francais	
	Deutsch	
	Itanliano	
	Espanol	
MISC	H OSD Position	Adjustment Bar
	V OSD Position	Adjustment Bar
	Smoothing	Adjustment Bar
	Background	ON/OFF
	ViewMeter	
	Recall	

FACTORY PRESET TIMINGS

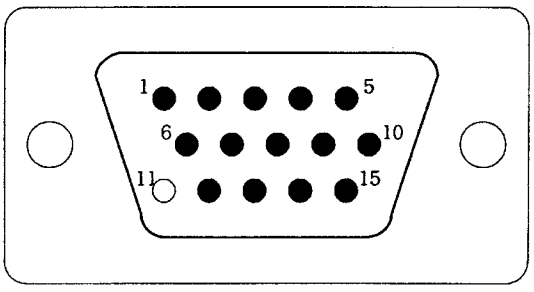
These timings are preset for the analog input.

Timing	Horizontal Polarity	Horizontal Frequency	Vertical Polarity	Vertical Frequency
VGA 640x350	+	31.47 kHz	-	70.09 Hz
VGA 720x400	-	31.47	+	70.08
VGA 640x400	-	31.47	+	70.09
VGA 640x480	-	31.47	-	59.94
VESA 640x480	-	37.86	-	72.81
VESA 640x480	-	37.50	-	75.00
MAC 640x480	-	35.00	-	66.67
VESA 800x600	+	35.15	+	56.25
VESA 800x600	+	37.88	+	60.32
VESA 800x600	+	48.08	+	72.19
VESA 800x600	+	46.88	+	75.00
MAC 832x624	-	49.72	Composite	74.54
VESA 1024x768	-	48.36	-	60.00
VESA 1024x768	-	56.48	-	70.07
VESA 1024x768	-	58.04	-	71.92
VESA 1024x768	+	60.02	+	75.03
MAC 1024x768	-	60.24	-	74.92
VESA 1280x1024	+	63.98	+	60.02
VESA 1280x1024	+	79.98	+	75.03

PIN ASSIGNMENT

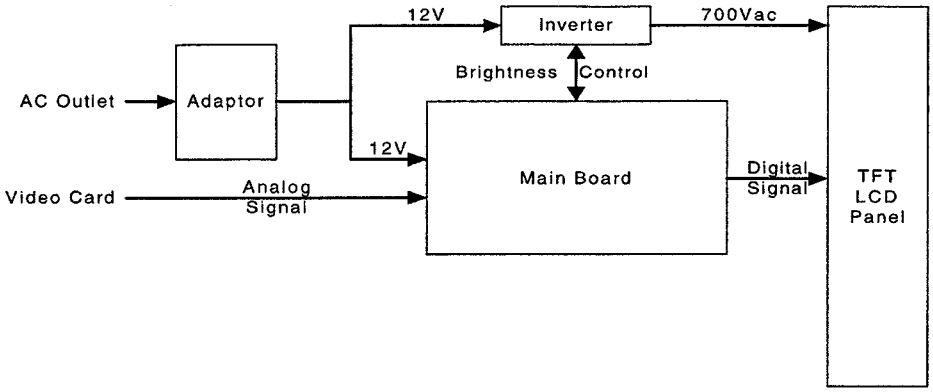
The analog input uses a 15 Pin Mini D-Sub connector. This display supports Hot Plug Detection (HPD) – capable of detecting DDC even after power is disconnected. Note that the PC's must provide a +5V on the pin 9 of D-Sub in order to perform HPD.

Pin	Description
1	Red
2	Green
3	Blue
4	Ground
5	Ground
6	R-Ground
7	G-Ground
8	B-Ground
9	+5V (input) from PC
10	Ground
11	No Connection
12	(SDA)
13	H-Sync (Composite Sync)
14	V-Sync
15	(SCL)

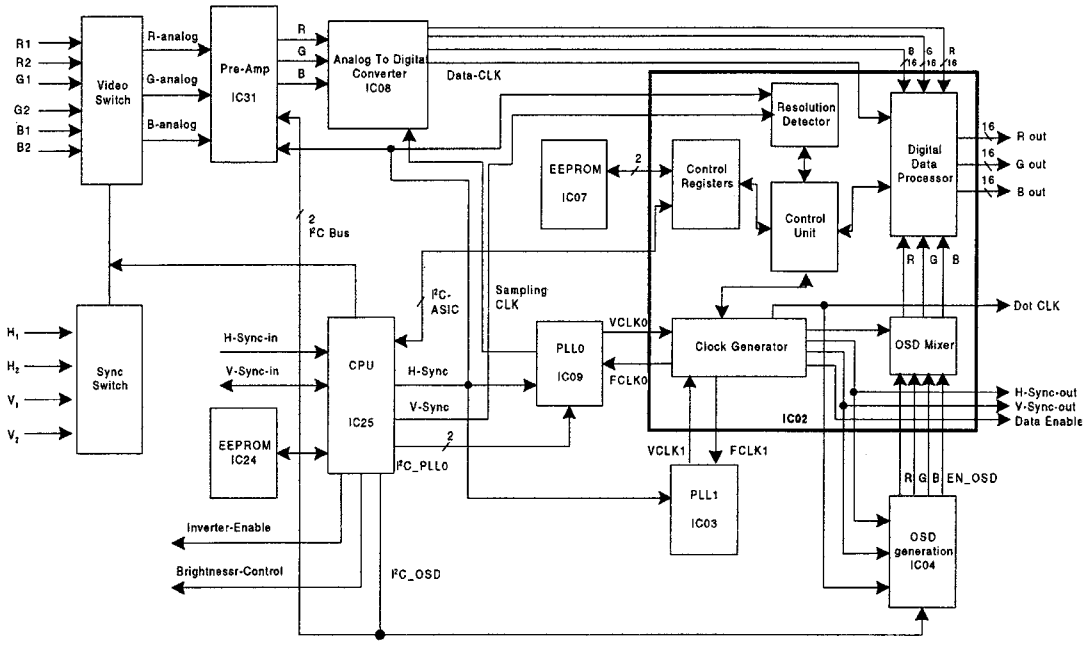


BLOCK DIAGRAM

COMPLETE TFT LCD DISPLAY UNIT



MAIN BOARD (TFT LCD DISPLAY ANALOG INTERFACE CONTROL BOARD)



MAIN BOARD I/O CONNECTIONS

W04 CONNECTION (RIGHT LEFT) "OSD CONTROL"

Pin	Description
1	"-" Key
2	" Function " Key
3	"+" Key
4	Recall
5	LED 1
6	LED 2
7	Ground
8	Power 1
9	Power 2

W05 CONNECTION (RIGHT LEFT) "INVERTER CONTROL"

Pin	Description
1	+12V
2	Ground
3	Vcon
4	No Connection
5	V Enable

MAIN BOARD I/O CONNECTIONS

W07 CONNECTION "VIDEO SIGNAL OUT TO LCD PANEL"

Pin	Description
1	N.C.
2	N.C.
3	N.C.
4	N.C.
5	Red Odd Data Signal 0
6	Ground
7	Red Odd Data Signal 2
8	Red Odd Data Signal 1
9	Red Odd Data Signal 4
10	Red Odd Data Signal 3
11	Red Odd Data Signal 6
12	Red Odd Data Signal 5
13	Ground
14	Red Odd Data Signal 7
15	Green Odd Data Signal 1
16	Green Odd Data Signal 0
17	Green Odd Data Signal 3
18	Green Odd Data Signal 2
19	Green Odd Data Signal 5
20	Green Odd Data Signal 4
21	Green Odd Data Signal 7
22	Green Odd Data Signal 6
23	Blue Odd Data Signal 0
24	Ground
25	Blue Odd Data Signal 2
26	Blue Odd Data Signal 1
27	Blue Odd Data Signal 4
28	Blue Odd Data Signal 3
29	Blue Odd Data Signal 6
30	Blue Odd Data Signal 5

Pin	Description
31	Ground
32	Blue Odd Data Signal 7
33	Red Even Data Signal 1
34	Red Even Data Signal 0
35	Red Even Data Signal 3
36	Red Even Data Signal 2
37	Red Even Data Signal 5
38	Red Even Data Signal 4
39	Red Even Data Signal 7
40	Red Even Data Signal 6
41	Green Even Data Signal 0
42	Ground
43	Green Even Data Signal 2
44	Green Even Data Signal 1
45	Green Even Data Signal 4
46	Green Even Data Signal 3
47	Green Even Data Signal 6
48	Green Even Data Signal 5
49	Ground
50	Green Even Data Signal 7
51	Blue Even Data Signal 1
52	Blue Even Data Signal 0
53	Blue Even Data Signal 3
54	Blue Even Data Signal 2
55	Blue Even Data Signal 5
56	Blue Even Data Signal 4
57	Blue Even Data Signal 7
58	Blue Even Data Signal 6
59	Ground
60	Ground

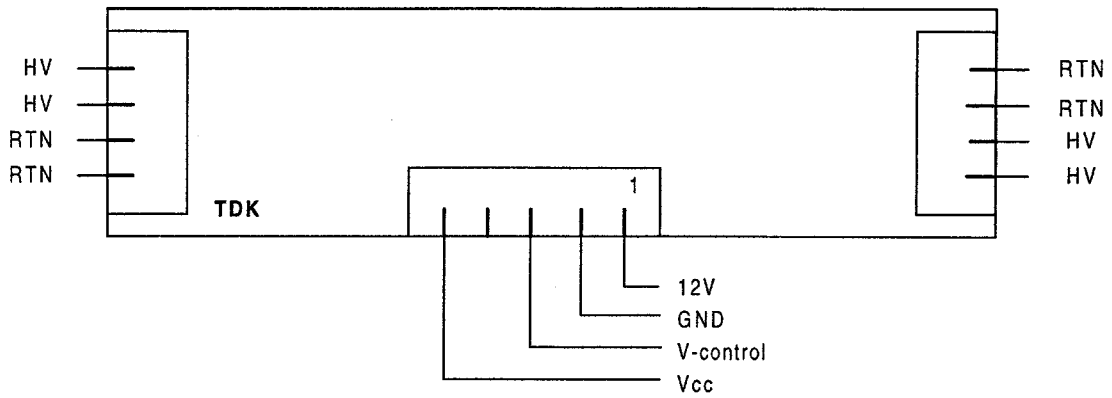
MAIN BOARD I/O CONNECTIONS

W07 CONNECTION "VIDEO SIGNAL OUT TO LCD PANEL"

Pin	Description
61	V Sync Signal
62	Ground
63	Data Enable Signal
64	H Sync Signal
65	Ground
66	Ground
67	Dot Clock
68	Dot Clock
69	Ground
70	Ground

Pin	Description
71	Power of LCD
72	Power of LCD
73	Power of LCD
74	Power of LCD
75	Ground
76	Ground
77	+12Vp
78	+12Vp
79	+12Vp
80	+12Vp

INVERTER BOARD I/O CONNECTIONS



NOTE: MANUFACTURER'S NAME MUST BE ON THE PRINTED SIDE FOR THE INVERTER BOARD TO BE FACING UP.

THEORY OF CIRCUIT OPERATION

The VG175 is a multi-frequency and multi-mode color MVA TFT LCD display. It supports different resolutions including SXGA, XGA, SVGA, VGA and other various high resolution modes up to 1280x1024 for IBM, PC compatibles, Power PC and Macintosh. This MVA TFT LCD panel, with a 0.270 mm pixel pitch, provides sharp flicker-free images.

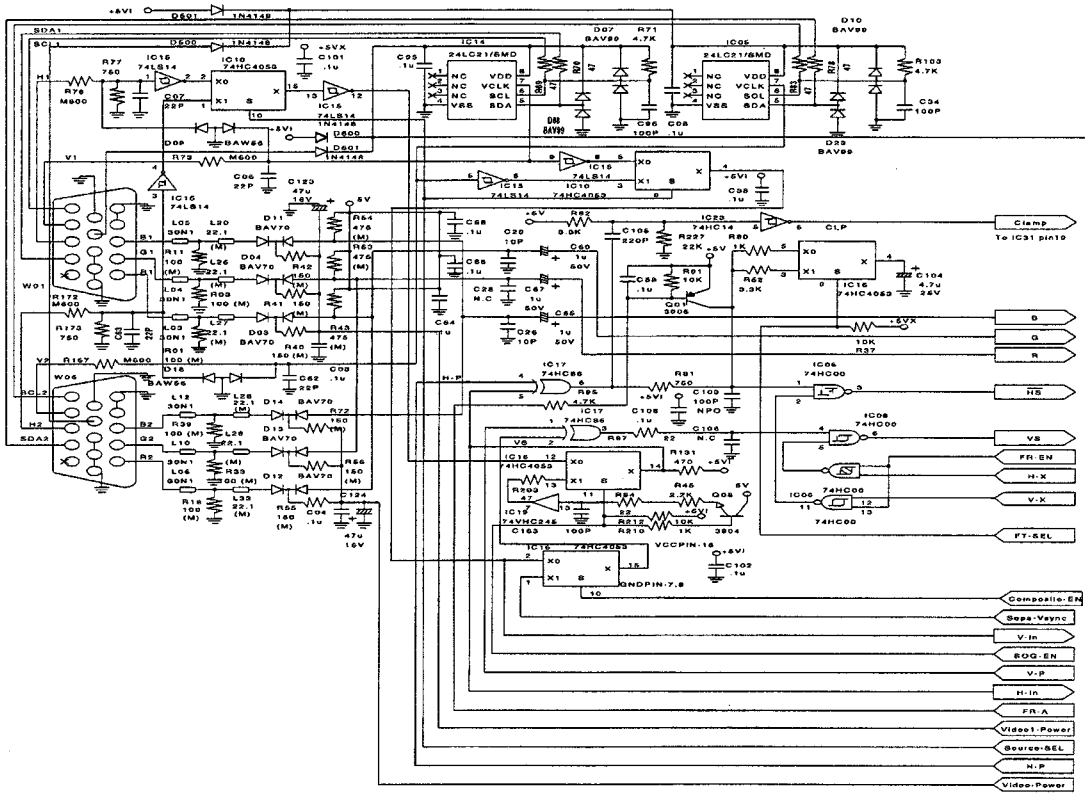
As the previous block diagram illustrates, the VG175 uses the Analog Interface Controller (IC02) ASIC for mode detection and resolution amplifying from its preset values. The purpose of the two sets of PLL's is to provide the clock from multiple horizontal synchronous frequencies. PLL0 provides A/D converter's sampling clock with the ICS1523 (IC09) while PLL1 produces the LCD panel's dot clock with the TLC2933 (IC03).

Furthermore, each TFT LCD display uses the 24LC21 (EEPROM) chip to provide DDC2B™ with Plug&Play. Also included in each monitor is a mode detection feature to examine the H/V-Sync frequency input level to decide for power saving mode. Power saving will shut down certain components in order to reduce power consumption. So with the smart power system, this product only consumes power of less than 3 W while in Active Off-Mode.

Upon receiving video signal input, the Analog Interface Controller (Digital Process and Control System) will trigger the mode detection function such that the internal controls can use the ROM's preset information to drive the Analog Interface Controller. In addition, the preset values can determine A/D converter clock, LCD dot clock, line buffer input/output rate, V-Sync and H-Sync pulse width; back porch and front porch to provide optimal performance for the TFT LCD display.

Digital process and control systems allow users to control OSD menu values to change the display settings that include: fine tune, contrast, brightness, color, H/V position, and H size. The following sections describe the TFT LCD display control board's major functions.

THEORY OF CIRCUIT OPERATION



VG175 is a dual port Analog input LCD display. Users can use the same display with two different Video Sources at the same time. With the hot key function by ▼, the user can easily switch the Video Source between Source 1 and Source 2. It also can support source auto-detection.

Once the active source is removed, it will switch to the other port for mode detection automatically. It will also recognize whichever source is reconnected while in power saving mode.

As the schematics show, many control signals are contained within this block. The following shows the functions for every signal:

1) **Source-SEL:** The control signal controls which video source is selected. If the signal gets to a low level, then Video 1 will be used; but if the signal gets to a high level, then Video 2 will be used. Video 1-power and Video 2-power use the same control logic. This means when Video 1 is used, then Video 1-power has –5V power on this pin. Video2-power works the same way.

THEORY OF CIRCUIT OPERATION

2) **V-in and H-in:** These two Sync's will transmit to MPU for mode detection. If these two sources are not separated Sync's, the MPU will enable the Composite-EN and SOG-EN to check that the input signal is a Composite or Sync On Green type. This way, the VG175 automatically works normally irrelevant of the Sync signal that is used. When in power saving mode, the MPU will monitor each port for legal source signals.

3) **Sep-Vsync:** Vsync is decoded from the MPU. When the MPU gets a composite Sync on H-in, it creates a separate V-sync.

4) **H-P and V-P:** These two signals are controlled by the MPU. They are used for sync correction. If the MPU detects a negative Sync on Hin/Vin, the H-P/V-P will pull up to a high level. Conversely, a positive Sync produces a low level on these two pins. This assures that there is always a positive Sync on IC17 pin 6 and pin 3.

5) **FR-A and FR-EN:** These two control signals are controlled by the MPU for the creation of the free run mode function. They are used by the same control logic. When the video source being used is interrupted, the screen will show a message - "No Signal". This is known as the free run mode. The same mode is also used when the screen shows a message of "Testing" and "Out of range". If the display is in free run mode, the FR-A will be at low level and FR-EN will be at high level thus allowing H-X and V-X to pass the NAND gate of IC06 and get into the main circuit. The H-X and V-X are both fixed Sync's and created by the IC02.

6) **CLAMP and R/G/B:** All of these signals are present at IC31 which is a pre-Amplifier that can scale the Vp-p to a proper value for the A/D conversion. The CLAMP is the indication signal for the purpose of capturing the dc-level of the R, G, B video during normal operation.

7) **FT-SEL:** This is the Fine Tune selection function. Because VG175 is a multi-sync display, it must support a full range of pixel rates that are within spec (25M~135M pixel rate). Therefore, there needs to be different scales of Fine Tune functions for optimizing the image adjustment. When the input pixel rate is lower than 50MHz, the FT-SEL will become a low level. When pixel rate is higher than 50MHz, FT-SEL will become a high level. The VG175 can support DDC 2B function with two 24LC21's (IC14 and IC05). Each port has it's own DDC Data, but basically the data will be the same. The VG175 also can support hot plug function for DDC. This means PC's can read DDC Data even the monitor is turned off or in power save mode. The only requirement is that the PC must provide +5V on pin 9 of D-Sub.

THEORY OF CIRCUIT OPERATION

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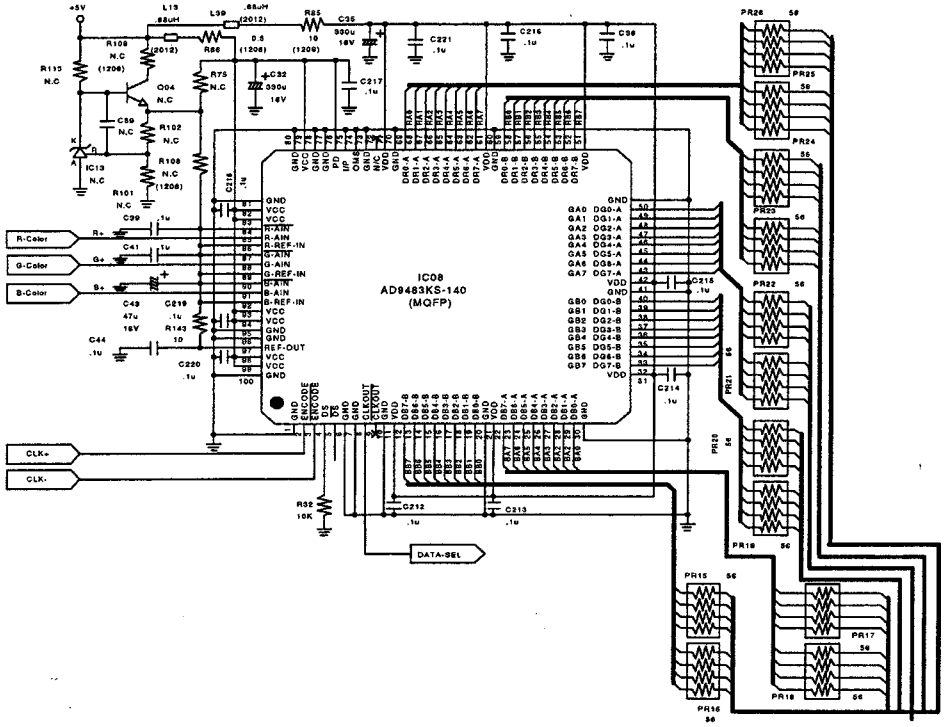
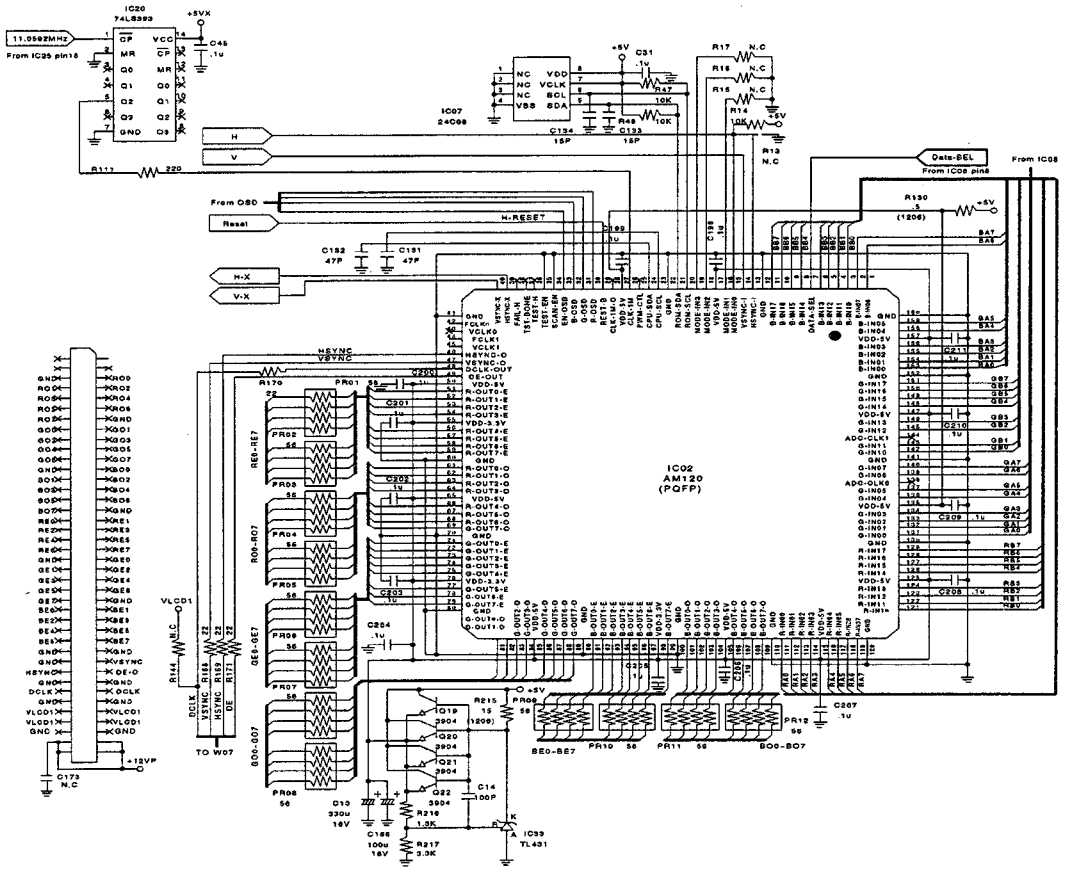


The *AD9483* is a triple 8-bits monolithic analog-to-digital converter optimized for digitizing RGB graphics signals from personal computers and workstations. It has a 140MSPS encode rate capability and full-power analog bandwidth of 330MHz to support display resolution of up to 1280 x 1024 at 75Hz with sufficient input bandwidth to accurately acquire and digitize each pixel. To minimize system cost and power dissipation, the AD9483 includes and internal +2.5V reference and track-and-hold circuit. The user provides only a +5V power supply and an encode clock. No external reference or driver components are required for many applications, The digital outputs are three-state CMOS outputs. Separate output power supply pins support interfacing with 3.3V or 5V logic.

The CLK+ and CLK- is provided by ICS1523, which is responsible for creating a sampling CLK for A/D conversion. DATA-SEL is generated by the ADC. The main function of this signal is to synchronize the output digital data for getting a correct transmission to the scaling chip.

THEORY OF CIRCUIT OPERATION



AM120

The AM120 is capable of performing automatic detection of the display resolution and timing of the input signals generated from various graphic cards. The AM120 then automatically scales the input image to fill the full screen of the LCD display. The AM120 can interface with the TFT LCD panels from various manufacturers by generating 48-bits R.G.B. signal to the LCD panel based on the timing parameter saved in the EEPROM (IC07).

THEORY OF CIRCUIT OPERATION

The AM120 has the following major functions;
1. Input mode detection & auto calibration block.
2. Buffer memory and read / write control block.
3. Image scaling, interpolation and dithering block.
4. EEPROM interface block.
5. OSD mixer and LCD interface block.
6. CPU interface block.

The following sections will describe the functions:

Input Mode Detection

The AM120 can automatically detect the mode of the input signal without any user adjustment or driver running on the PC host or external CPU. It automatically detects polarity of input synchronization and the sizes of back porch, valid data window and the synchronization pulse width in both vertical and horizontal directions. The size information is then used to determine the input resolution, to generate the frequency driver for the input PLL, to lock the PLL output clock with HSYNC, to automatically scale the image to full screen, and to synchronize the output signal with the input signal. The detection logic is always active to automatically detect any changes to the input mode.

Auto Calibration

The AM120 can automatically calibrate the phase of the sample clock in order to preserve the bandwidth of the input signal and get the best quality. The AM120 implements a proprietary image quality function. During auto-calibration process, the AM120 continues to search for the best phase to optimize the image quality. The output image may display some jitter and blurring during the auto-calibration process, but the image will become crisp and sharp once the optimum phase is found. The user can change the sampling clock phase value via the external CPU. The phase calibration process can be delayed and even disabled via the external CPU if the system designer wants their own implementation. The phase calibration can be independently turned ON or OFF via the external CPU. When the calibration is turned OFF, the external CPU can change the input mode and frequency definitions.

THEORY OF CIRCUIT OPERATION

Buffer memory and read/write control block

The AM120 uses internal buffer memory to store a portion of the input image for image scaling and output synchronization. No external memory buffer is needed for the AM120. The write control logic ensures the input data are stored into the right area of the buffer memory, and the read control logic is responsible for fetching the data from the correct area of the buffer memory and at the correct timing sequence. With the precise timing control of the write and read logic, the output image is appropriately scaled to the full screen, and the output signal is perfectly synchronized with the input signals.

Image Scaling

The AM120 supports several different input modes, and the input image may have different sizes. It is essential to support automatic image scaling so that the input image is always displayed to the full screen regardless the input mode. The AM120 scales the images in both horizontal and vertical directions. It calculates the correct scaling ratio for both directions based on the LCD panel resolution, the input mode and timing information produced by the input mode detection & auto calibration function. The scaling ratio is re-adjusted whenever a different input mode is detected. The ratio is then fed into the buffer memory read control logic for fetching the image data with the right sequence and timing. Some of the image data may be read more than once to achieve scaling effect.

Image Interpolation

The AM120 supports image interpolation to achieve better image quality. A basic image scaling algorithm replicates the input images to achieve the scaling effect. The replication scheme usually results in a poor image quality. The AM120 implements both bi-linear interpolation and a proprietary programmable interpolation algorithm. The programmable interpolation is implemented with a 256-entry mapping table in the EEPROM to allow system user to adjust the bi-linear interpolation parameters to control the sharpness and smoothness quality of the image. In the default setting, the mapping table contains a straight line at a slope equal to 1, i.e. the data in entry N equals to the value N. if the mapping table contains a line at a slope equal to 2, then the output image will be a bit sharper than image generated by a table with the default setting.

THEORY OF CIRCUIT OPERATION

Dithering

The AM120 supports 16.7 million true colors for 6-bit panel. Two dithering algorithms are implemented and users can choose between them through the external micro-controller. The first one is area-based dithering, and the second one is a frame-based frame modulation, which is also called frame rate control. Through external micro-controller, users can choose among different dithering algorithm.

OSD mixer and LCD interface

At the output stage, the AM120 performs the OSD mixer function, and then generates 24-bit / 48 bit RGB signal to the LCD panel with the correct timing.

OSD mixer

In the OSD mixer block, the AM120 mixes the normal output RGB signal with the OSD signal. The OSD output data is generated based on the R_OSD, G_OSD and B_OSD pins as well as the OSD Intensity data in EEPROM entry. When the EN_OSD is active high, the OSD is active, and the AM120 will send the OSD data to the LCD panel. The OSD has 16 different color schemes based on the combinations of the three OSD color pins and the OSD Intensity data. When R_OSD=1, OSD_Intensity=0, the AM120 will output 128 to the output red channel, R_OUT. When R_OSD=1, and OSD Intensity=1, the AM120 will output 255. The same scheme is used for G-OSD to G-OUT and for B-OSD to B_OUT.

EEPROM interface

As mentioned in previous sections, the external EEPROM stores many crucial information for the AM120 internal operations. The AM120 interfaces with the EEPROM through a 2-wire I^2C serial interface. The suggested EEPROM device is an industry standard serial-interface EEPROM (24x08). The I^2C interface scheme is briefly described here and a detailed description can be found in public literatures.

THEORY OF CIRCUIT OPERATION

Input Mode Dependent Data

Symbol	W	640 x 350	640 x 400	720 x 400	640 x 480	800 x 600	832 X 624	1024 x 768	Description
VPW	11	00H 01H	20H 21H	40H 41H	60H 61H	80H 81H	AOH A1H	C0H C1H	LCD VSYNC pulse width
VBP	11	02H 03H	22H 23H	42H 43H	62H 63H	82H 83H	A2H A3H	C2H C3H	LCD VSYNC back porch (including VPW)
VBP source	11	04H 05H	24H 25H	44H 45H	64H 65H	84H 85H	A4H A5H	C4H C5H	LCD VSYNC back porch (source equivalent) =VBP * Line Expansion and round up
Target Skip Pixel	11	06H 07H	26H 27H	46H 47H	66H 67H	86H 87H	A6H A7H	C6H C7H	If VBP can not be converted into source evenly, the leftover is converted into number of pixels
VSIZE	11	08H 09H	28H 29H	48H 49H	68H 69H	88H 89H	A8H A9H	C8H C9H	LCD number of line
HPW	11	0AH 0BH	2AH 2BH	4AH 4BH	6AH 6BH	8AH 8BH	AAH ABH	CAH CBH	LCD HSYNC pulse width
HBP	11	0CH 0DH	2CH 2DH	4CH 4DH	6CH 6DH	8CH 8DH	ACH ADH	CCH CDH	LCD HSYNC back porch (including HPW)
HSIZE	11	0EH 0FH	2EH 2FH	4EH 4FH	6EH 6FH	8EH 8FH	AEH AFH	CEH CFH	LCD number of columns
HTOTAL	11	10H 11H	30H 31H	50H 51H	70H 71H	90H 91H	B0H B1H	D0H D1H	LCD total number of pixels per line including all porches
HTOTAL Source	12	12H 13H	32H 33H	52H 53H	72H 73H	92H 93H	B2H B3H	D2H D3H	LCD total number of clocks per line (source equivalent) = HTOTAL/Line Expansion
Line Expansion	4	14H [6:3]	34H	54H	74H	94H	B4H	D4H	Vertical source to destination scaling factor 0 : one to one expansion (no expansion) 1-15 : expansion ratio other than one to one (expansion)
Pixel Expansion	3	14H [2:0]	34H	54H	74H	94H	B4H	D4H	Horizontal source to destination scaling factor 0 : one to one expansion (no expansion) 1-7 : expansion ratio other than one to one (expansion)

THEORY OF CIRCUIT OPERATION

Symbol	W	640 x 350	640 x 400	720 X 400	640 x 480	800 x 600	832 x 624	1024 X 768	Description
H. Fog Factor	8	15H [7:0]	35H	55H	75H	95H	B5H	D5H	Horizontal fogging factor high byte
H. Fog Factor	8	16H [7:0]	36H	56H	76H	96H	B6H	D6H	Horizontal fogging factor low byte
V. Fog Factor	8	17H [7:0]	37H	57H	77H	97H	B7H	D7H	Vertical fogging factor high byte
V. Fog Factor	8	18H [7:0]	38H	58H	78H	98H	B8H	D8H	Vertical fogging factor low byte
Minimum Input lines [10:8]	3	19H [6:4]	39H	59H	79H	99H	B9H	D9H	Upper 3 bits of minimum input lines
Maximum Input pixels [10:8]	3	19H [2:0]	39H	59H	79H	99H	B9H	D9H	Upper 3 bits of maximum input pixels
Minimum Input lines [7:0]	8	1AH	3AH	5AH	7AH	9AH	BAH	DAH	Minimum input lines = (VSIZE + VBP) * Line Expansion. When the input has fewer Lines than this value, it is considered as an ERROR, and INPUT_X status bit will be HIGH.
Maximum Input pixels [7:0]	8	1BH	3BH	5BH	7BH	9BH	BBH	DBH	Maximum input pixels per line. Auto clock recovery will not set input PLL divisor larger than this value.
Source HSIZE [10:8]	3	1CH [6:4]	3CH	5CH	7CH	9CH	BCH	DCH	Source horizontal size upper 3 bits
Source VSIZE [10:8]	3	1CH [2:0]	3CH	5CH	7CH	9CH	BCH	DCH	Source vertical size upper 3 bits
Source HSIZE [7:0]	8	1DH	3DH	5DH	7DH	9DH	BDH	DDH	Source horizontal size lower 8 bits
Source VSIZE [7:0]	8	1EH	3EH	5EH	7EH	9EH	BEH	DEH	Source vertical size lower 8 bits
Check sum	8	1FH	3FH	5FH	7FH	9FH	BFH	DFH	Sum of above 31 bytes (keep lower 8 bits only)

THEORY OF CIRCUIT OPERATION

Input Mode Detection Data

Symbol	Width (bits)	Address	Description
Data low threshold	8	1C0H	Low water mark for valid data If the data is smaller than this threshold, it is considered LOW internally
Data high threshold	8	1C1H	High water mark for valid data If data is larger than this threshold, it is considered HIGH internally
Edge threshold	8	1C2H	Minimum difference between the data value of two adjacent pixels to be considered as an edge
Calibration mode	2	1C3H [1:0]	This is to select different operation modes of internal phase calibration. The selection criterion is as follow: 0:when input video signal has large overshoot, it results in longest calibration time 1:when input video signal has median overshoot, it results in long calibration time 2:when input video signal has normal overshoot, it results in normal calibration time (recommended) 3:when input video signal has no overshoot, it results in shortest calibration time
Mode 640 x 350 Sync Polarity	2	1C4H [5:4]	The polarity of input synchronization signals Bit 0 is for VSYNC and bit 1 is for HSYNC
Res0 threshold [10:8]	3	1C4H [2:0]	Upper bound of the line number for 640x350 mode
Res0 threshold [7:0]	8	1C5H	Upper bound of the line number for 640x350 mode, and lower bound for 640x400
Mode 640 x 400 Sync Polarity	2	1C6H [5:4]	The polarity of input synchronization signals Bit 0 is for VSYNC and bit 1 is for HSYNC
Res1 threshold [10:8]	3	1C6H [2:0]	Upper bound of the line number for 640x400 mode
Res1 threshold [7:0]	8	1C7H	Upper bound of the line number for 640x400 mode, and lower bound for 720x400
Mode 720 x 400 Sync Polarity	2	1C8H [5:4]	The polarity of input synchronization signals Bit 0 is for VSYNC and bit 1 is for HSYNC
Res2 threshold [10:8]	3	1C8H [2:0]	Upper bound of the line number for 720x400 mode
Res2 threshold [7:0]	8	1C9H	Upper bound of the line number for 720x400 mode, and lower bound for 640x480

THEORY OF CIRCUIT OPERATION

Input Mode Detection Data

Symbol	Width (bits)	Address	Description
Mode 640x480 Sync Polarity	2	1CAH [5:4]	The polarity of input synchronization signals Bit 0 is for VSYNC and bit 1 is for HSYNC
Res3 threshold	3	1CAH [2:0]	Upper bound of the line number for 640x480 mode
Res3 threshold	8	1CBH	Upper bound of the line number for 640x480 mode, and lower bound for 800x600
Mode 800x600 Sync Polarity	2	1CCH [5:4]	The polarity of input synchronization signals Bit 0 is for VSYNC and bit 1 is for HSYNC
Res4 threshold [10:8]	3	1CCH [2:0]	Upper bound of the line number for 800x600 mode
Res4 threshold [7:0]	8	1CDH	Upper bound of the line number for 800x600 mode, and lower bound for 832x624
Mode 832x624 Sync Polarity	2	1CEH [5:4]	The polarity of input synchronization signals Bit 0 is for VSYNC and bit 1 is for HSYNC
Res5 threshold [10:8]	3	1CEH [2:0]	Upper bound of the line number for 832x624 mode
Res5 threshold [7:0]	8	1CFH	Upper bound of the line number for 832x624 mode, and lower bound for 1024x768
Mode 1024x768 Sync Polarity	2	1D0H [5:4]	The polarity of input synchronization signals Bit 0 is for VSYNC and bit 1 is for HSYNC
Res6 threshold [10:8]	3	1D0H [2:0]	Upper bound of the line number for 1024x768 mode
Res6 threshold [7:0]	8	1D1H	Upper bound of the line number for 1024x768 mode
Reserve mode 1 Sync Polarity	2	1D2H [5:4]	The polarity of input synchronization signals Bit 0 is for VSYNC and bit 1 is for HSYNC
Reserve mode 1 Res threshold [10:8]	3	1D2H [2:0]	Resolution threshold for reserve mode 1
Reserve mode 1 Res threshold [7:0]	8	1D3H	Resolution threshold for reserve mode 1
Reserve mode 2 Sync Polarity	2	1D4H [5:4]	The polarity of input synchronization signals Bit 0 is for VSYNC and bit 1 is for HSYNC
Reserve mode 2 Res threshold [10:8]	3	1D4H [2:0]	Resolution threshold for reserve mode 2
Reserve mode 2 Res threshold [7:0]	8	1D5H	Resolution threshold for reserve mode 2

THEORY OF CIRCUIT OPERATION

Symbol	Width (bits)	Address	Description
Reserve mode 3 Sync Polarity	2	1D6H [5:4]	The polarity of input synchronization signals Bit 0 is for VSYNC and bit 1 is for HSYNC
Reserve mode 3 Res threshold [10:8]	3	1D6H [2:0]	Resolution threshold for reserve mode 3
Reserve mode 3 Res threshold [7:0]	8	1D7H	Resolution threshold for reserve mode 3
Reserve mode 4 Sync Polarity	2	1D8H [5:4]	The polarity of input synchronization signals Bit 0 is for VSYNC and bit 1 is for HSYNC
Reserve mode 4 Res threshold [10:8]	3	1D8H [2:0]	Resolution threshold for reserve mode 4
Reserve mode 4 Res threshold [7:0]	8	1D9H	Resolution threshold for reserve mode 4
Reserve mode 5 Sync Polarity	2	1DAH [5:4]	The polarity of input synchronization signals Bit 0 is for VSYNC and bit 1 is for HSYNC
Reserve mode 5 Res threshold [10:8]	3	1DAH [2:0]	Resolution threshold for reserve mode 5
Reserve mode 5 Res threshold [7:0]	8	1DBH	Resolution threshold for reserve mode 5
Reserve mode 6 Sync Polarity	2	1DCH [5:4]	The polarity of input synchronization signals Bit 0 is for VSYNC and bit 1 is for HSYNC
Reserve mode 6 Res threshold [10:8]	3	1DCH [2:0]	Resolution threshold for reserve mode 6
Reserve mode 6 Res threshold [7:0]	8	1DDH	Resolution threshold for reserve mode 6
Reserve mode 7 Sync Polarity	2	1DEH [5:4]	The polarity of input synchronization signals Bit 0 is for VSYNC and bit 1 is for HSYNC
Reserve mode 7 Res threshold [10:8]	3	1DEH [2:0]	Resolution threshold for reserve mode 7
Reserve mode 7 Res threshold [7:0]	8	1DFH	Resolution threshold for reserve mode 7
Enable SYNC Check	14	1E0H-1E1H	Enable SYNC polarity check during input mode Detection. 1:enable SYNC polarity based mode detection 0:disable SYNC polarity based mode detection bit 0:640x350 bit 1:640x400 bit 2:720x400 bit 3:640x480 bit 4:800x600 bit 5:832x624 bit 6:1024x768 bit 7: res mode1 bit 8: res mode2 bit 9: res mode3 bit 10: res mode4 bit 11: res mode5 bit 12: res mode6 bit 13: res mode7

THEORY OF CIRCUIT OPERATION

Symbol	Width (bits)	Address	Description
Maximum VBP	8	1E2H	The maximum vertical back porch for input video
PWM unit delay	13	1E3H-1E4H	The unit delay used in the external PWM delay circuitry. If the free-running clock is 1MHz and the intended unit delay is 0.2 ns (=5,000MHz) then a value of 5,000MHz/1MHz = 5,000 is used here.
Maximum link off time	22	1E5H-1E7H	Maximum time when input VSYNC is off before the LINK_DWN pin turns ON (unit: clock period of the free running clock). If the free-running clock is 1MHz, and the intended maximum time is 1 second, then a value of 1,000,000 μs / 1 μs = 1,000,000 is used here.
Maximum refresh rate	16	1E8H-1E9H	Maximum refresh rate supported by the LCD panel. If the intended maximum refresh rate is 75Hz, and the free-running clock is 1MHz, there a value of 1000000/75=133,333 is used here
Maximum input frequency	8	1EAH	Maximum source clock rate supported by the AM100B (unit: frequency of free-running clock) If the intended maximum clock rate is 60MHz, and the free-running clock is 1MHz, then a value of 60 is used here. If the input signal has a higher frequency than this value, the VCLK00_X status bit will turn ON.
Scale factor CE	8	1EBH	Scale factor used when generate look up table for current even pixel multiplication
Scale factor CO	8	1ECH	Scale factor used when generate look up table for current odd pixel multiplication
Scale factor NE	8	1EDH	Scale factor used when generate look up table for next even pixel multiplication
Scale factor NO	8	1EEH	Scale factor used when generate look up table for next odd pixel multiplication
Offset factor CE	8	1EFH	Offset factor used when generate look up table for current even pixel multiplication
Offset factor CO	8	1F0H	Offset factor used when generate look up table for current odd pixel multiplication
Offset factor NE	8	1F1H	Offset factor used when generate look up table for next even pixel multiplication
Offset factor NO	8	1F2H	Offset factor used when generate look up table for next odd pixel multiplication
Scale factor V	8	1F3H	Scale factor used when generate look up table for line multiplication
Offset factor V	8	1F4H	Offset factor used when generate look up table for line multiplication
Minimum pixels per line for LCD	11	1F5H-1F6H	Minimum number of pixels per line for LCD panel

THEORY OF CIRCUIT OPERATION

Symbol	Width (bits)	Address	Description
LCD polarity	4	1F7H[3:0]	Controls the polarity of output VSYNC, HSYNC, clock and display enable Bit 0:0: clock active high, 1: clock active low Bit 1: 0: HSYNC active low, 1: HSYNC active high Bit 2: 0: VSYNC active low, 1: VSYNC active high Bit 3: 0: de active high, 1: de active low
Output enable for output pin 51-54, 56-59, 61-64, 66-69, 71-74, 76-79, 81-84, 86-89, 91-97, 99, 101-104, 106-109	1	1F8H[3]	Enable for programmable output pad 1 : output is enabled 0 : output is tri-state
Driving capability control for output pin 51-54, 56-59, 61-64, 66-69, 71-74, 76-79, 81-84, 86-89, 91-97, 99, 101-104, 106-109	3	1F8H[2:0]	0 : 2mA 1 : 6mA 2 : 6mA 3 : 10mA 4 : 4mA 5 : 8mA 6 : 8mA 7 : 12mA
Output enable for output pin 49 (DE)	1	1F9H[7]	Enable for programmable output pad 1 : output is enabled 0 : output is tri-state
Driving capability control for output pin 49 (DE)	3	1F9H[6:4]	0 : 2mA 1 : 6mA 2 : 6mA 3 : 10mA 4 : 4mA 5 : 8mA 6 : 8mA 7 : 12mA
Output enable for output pin 46 (HSYNC_O)	1	1F9H[3]	Enable for programmable output pad 1 : output is enabled 0 : output is tri-state
Driving capability control for output pin 46 (HSYNC_O)	3	1F9H[2:0]	0 : 2mA 1 : 6mA 2 : 6mA 3 : 10mA 4 : 4mA 5 : 8mA 6 : 8mA 7 : 12mA

THEORY OF CIRCUIT OPERATION

Symbol	Width (bits)	Address	Description
Output enable for output pin 47 (VSYNC_O)	1	1FAH[7]	Enable for programmable output pad 1 : output is enabled 0 : output is tri-state
Driving capability control for output pin 47 (VSYNC_O)	3	1FAH[6:4]	0 : 2mA 1 : 6mA 2 : 6mA 3 : 10mA 4 : 4mA 5 : 8mA 6 : 8mA 7 : 12mA
Output enable for output pin 48 (DCLK_OUT)	1	1FAH[3]	Enable for programmable output pad 1 : output is enabled 0 : output is tri-state
Driving capability control for output pin 48 (DCLK_OUT)	3	1FAH[2:0]	0 : 2mA 1 : 6mA 2 : 6mA 3 : 10mA 4 : 4mA 5 : 8mA 6 : 8mA 7 : 12mA
Check sum	8	1FBH	Sum of all part 9 bytes (keep only lower 8 bit)

Horizontal Interpolation Lookup Table

Symbol	Width(bits)	Address	Description
Mapped value	8	IFEH-2FDH	This is the base table for all four horizontal interpolation lookup tables. Each table is then generated by multiply this value with corresponding scale factor and added with corresponding offset factor.
Check sum	8	2FEH	Sum of all part 10 entry (only keep lower 8 bits)

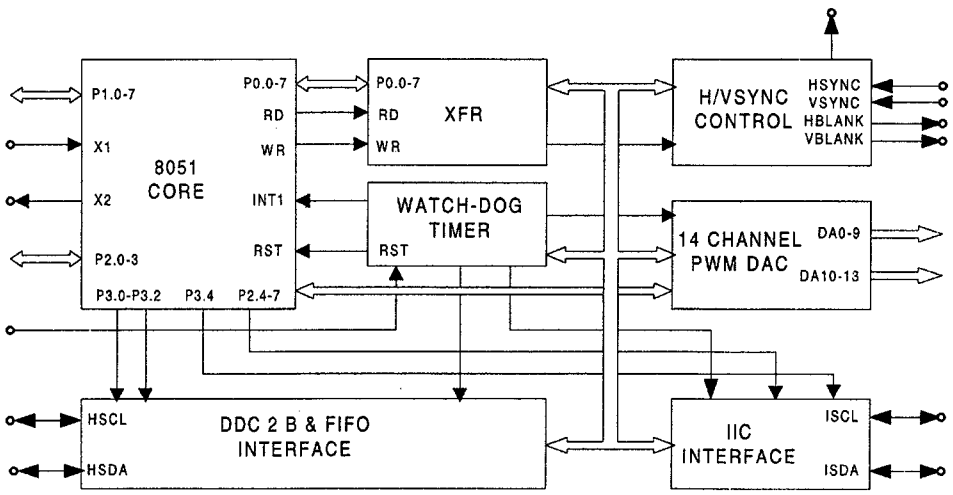
Vertical Interpolation Lookup Table

Symbol	Width(bits)	Address	Description
Mapped value	8	2FEH-3FEH	This is the base table for vertical interpolation lookup table. The vertical interpolation table is then generated by multiply this value with vertical scale factor and added with vertical offset factor
Check sum	8	3FFH	Sum of all part 10 entry (only keep lower 8 bits)

THEORY OF CIRCUIT OPERATION

The AM120 supports a 2-wire I^2C serial interface to external CPU. The interface allows external CPU to access and modify control registers inside the AM120. The I^2C serial interface is similar to the EEPROM interface, and the CPU is the host that drives the SCL for all the clock and for start and stop bits. The SCL frequency can be as high as 5MHz. The SDA is a bi-directional data wire. This interface support random and sequential write operations for CPU to modify one or multiple control registers, also random and sequential read operations for CPU to read all or part of the control registers.

The MTV112E micro-controller is an 8051CPU core embedded device specially tailored to CRT monitor applications. It includes an 8051 CPU core, 256 bytes SRAM, fourteen built-in PWM DACs, DDC2B interface, 24Cxx series EEPROM interface, A/D converter and a 32K bytes internal program EPROM.



THEORY OF CIRCUIT OPERATION

FUNCTIONAL DESCRIPTIONS

8051 CPU Core

1. The MTV112E includes all the 8051 functions with the following exceptions, PSEN, ALE, RD and WR pins are disabled. The external RAM access is restricted to XFRs within the MTV112E.
2. Port0, port3.3, and port3.5 ~ port3.7 are not general-purpose I/O ports. They are dedicated to monitor control or DAC pins.
3. INT1 and T1 input pins are not provided.
4. Port2.4 ~ port2.7 are shared with DAC pins; port3.0 ~ port3.2 port3.4 are shared with monitor control pins.

In addition, there are 2 timers, 5 interrupt sources and serial interface compatible with the standard 8051. The Txd/Rxd (P3./P3.1) pins are shared with DDC interface. INT0/T0 pins are shared with IIC interface. An extra option can be used to switch the INT0 source from P3.2 to P2.0. This feature maintains an external interrupt source when IIC interface.

The MTV112E pin functions are listed bellow

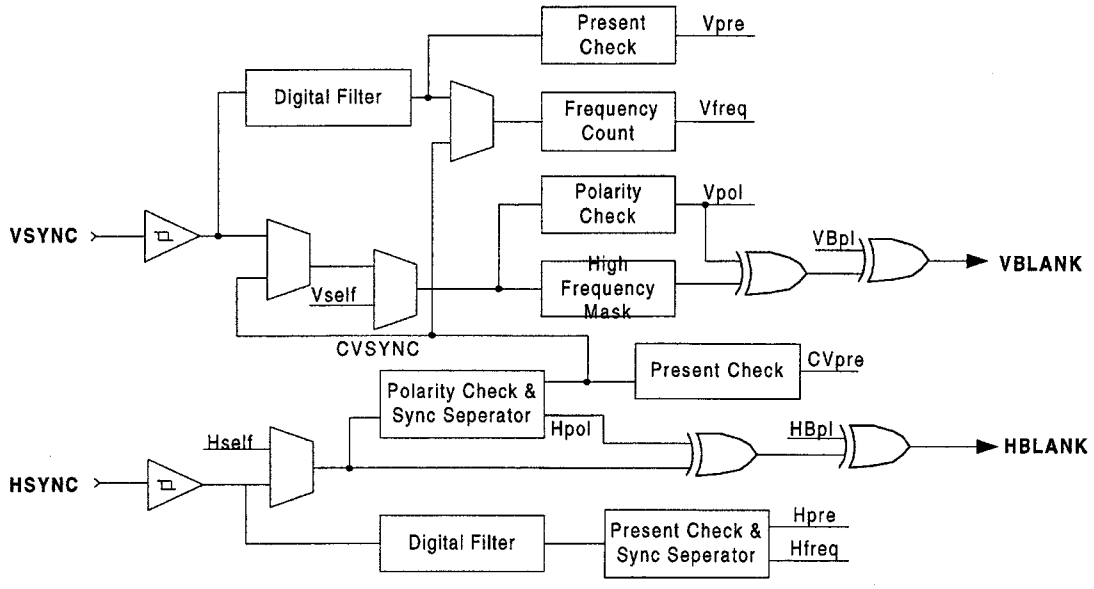
PIN#	Name	TYPE	Description
1	P1.0	I/O	SDA of I^2C for communication with ICS1523
2	P1.1	O	SCL of I^2C for communication with ICS1523
3	P1.2	O	Power switch of +5V and VLCD
4	P1.3	O	Fine tune function select
5	P1.4	O	H-Sync polarity
6	P1.5	O	V-Sync polarity
7	P1.6/ADD	O	Inverter enable
8	P1.7/AD1	O	AM120 Rest signal
9	RST	I	MPU Rest signal
10	HSCL	I	Host Serial Clock
11	HSDA	I/O	Host Serial Data
12	ISDA	I/O	SDA of I^2C for communication with 24C08, MTV118, M52473

THEORY OF CIRCUIT OPERATION

PIN#	Name	TYPE	Description
13	HSYNC	I	H-Sync input
14	ISCL	O	SCL of I^2C for communication with 24C08, MTV118, M52473
15	VSYNC	I	V-Sync output
16	HBK/P4.1	N.C.	
17	VBK/P4.0	O	Separated V-Sync signal from composite sync
18	X2	O	Oscillator output
19	X1	I	Oscillator input
20	VSS	-	Negative Power Supply
21	P2.0/INT0	-	Reserve
22	P2.1	I/O	SDA of I^2C for communication with AM120
23	P2.2	I/O	SCL of I^2C for communication with AM120
24	P2.3	-	Reserve
25	D13/P2.4	I	'+" key
26	D12/P2.5	I	"1" key
27	D11/p2.6	I	'-" key
28	D10/P2.7	I	"2" key
29	STOUT/P4.2	-	N.C.
30	D9	O	LED 2
31	D8	O	LED 1
32	D7	O	Video offset control
33	D6	O	Volume Control
34	D5	O	External H-Sync cutoff control
35	D4	O	Video gain control
36	D3	O	Sync on green /separate or composite select
37	D2	O	V-Sync select (VBK/external V-Sync)
38	D1	O	Free run mode enable
39	D0	O	Power of inverter on/off control
40	VDD	-	Positive Power Supply

THEORY OF CIRCUIT OPERATION

H/V SYNC Processing



The SYNC processing block performs the functions of composite signal separation, sync inputs presence check, frequency counting, polarity detection and control, as well as protection of VBLANK output while VSYNC speed up in high DDC communication clock rate. The preset and frequency function block treat any pulse shorter than one OSC period as noise.

Composite sync separate

The MTV112E continuously monitors the input HSYNC, if the vertical sync pulse can be extracted from the input, a CVpre flag is set and user can select the extracted "CVSYNC" for the source of polarity check, frequency count, and VBLANK. The CVSYNC will have 10-16 μs delay compared to the original signal. The delay depends on the OSC frequency and composite mix method.

H/V Polarity Detect

The polarity functions detect the input HSYNC/VSYNC high and low pulse duty cycle. If the high pulse duration is longer than that of low pulse, the negative polarity is asserted; otherwise positive polarity is asserted. The HPLchg interrupt is set when the Hpol value changes. The VPLchg interrupt is set when Vpol value changes.

THEORY OF CIRCUIT OPERATION

H/V Frequency Counter

MTV112E can discriminate HSYNC/VSYNC frequency and saves the information in XFRs. The 15 bits Hcounter counts the time of 64XHSYNC period, but only 11 upper bits are loaded into the HCNTH/HCNTL latch.
The 11 bits output value will be (2/Hfreq) / (1/OSCfreq), updated once per VSYNC/CVSYNC period when VSYNC/CVSYNC is present or continuously updated when VSYNC/CVSYNC is non-present. The 14 bits Vcounter counts the time between two VSYNC pulse, but only 9 upper bits are loaded into the VCNTH/VCNTL latch. The 9 bits output value will be (1/Vfreq) / (512/OSCfreq), updated every VSYNC/CVSYNC period. An extra overflow it indicates the condition of H/V counter overflow. The VFchg/HFchg interrupt is active when VCNT/HCNT value changes or overflow.

H/V Present Check

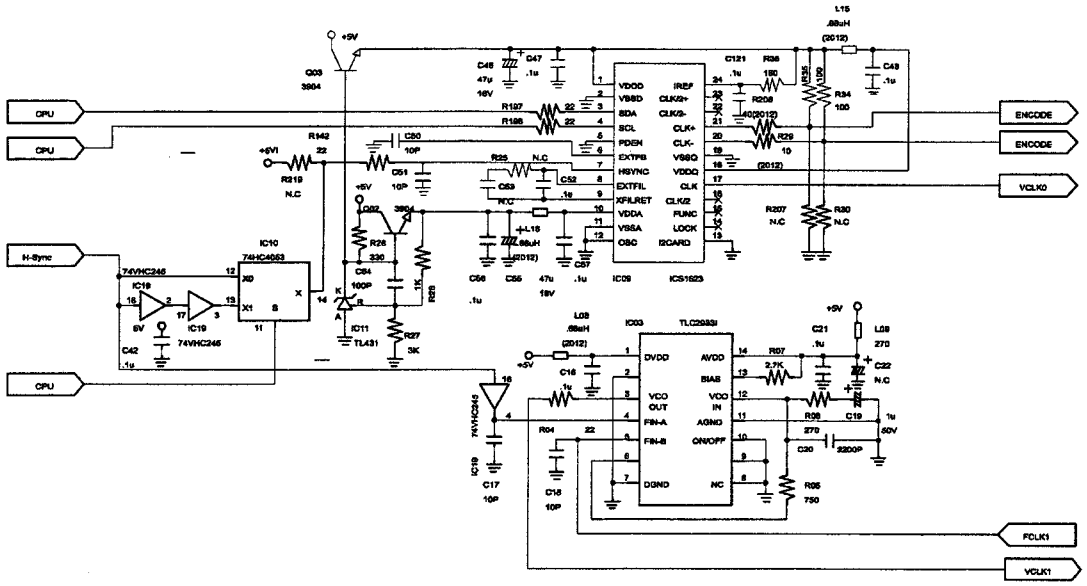
The Hpresent function checks the input HSYNC pulse, Hpre flag is set when HSYNC IS OVER 10KHz or cleared when HSYNC is under 10Hz. The Vpresent function checks the input VSYNC pulse, the Vpre flag is set when VSYNC is over 40Hz or cleared when VSYNC is under 10Hz. A control bit "PREFS" selects the time base for these functions. The HPRchg interrupt is set when the Hpre value changes. The VPRchg interrupt is set when the Vpre/Cvpre value change. However, the Cvpre flag interrupt may be disabled when S/W disables the composite function.

Output HBLANK/VBLANK Control and Polarity Adjust

The HBLANK is the mix output of HSYNC and self-test horizontal pattern. The VBLank is the mix output of VSYNC, CVSYNC and self-test vertical pattern. The mix selection and output polarity are S/W controllable. The VBLANK output is cut off when VSYNC frequency is over 200Hz or 133Hz depends on 8MHz/12MHz OSC selection. The HBLANK/VBLANK shares the output pin with P4.1/P4.0.

THEORY OF CIRCUIT OPERATION

PLL

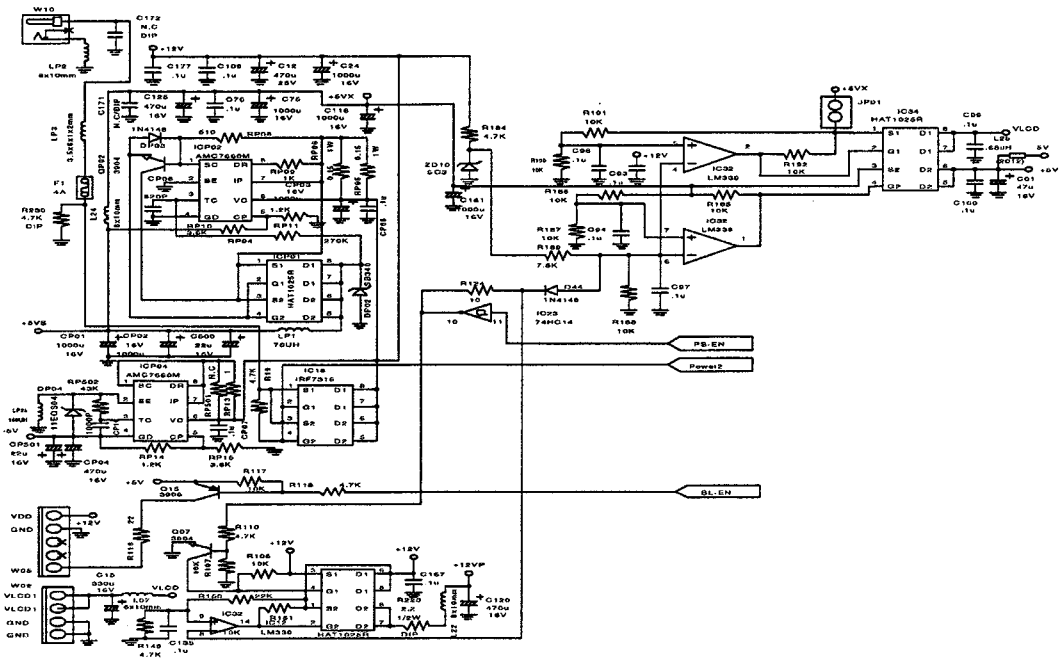


The *ICS1523* is a high performance frequency generator intended for line-locked and gen-locked high resolution video applications. It offers pixel clock outputs in both differential (to 250MHz) and single-ended (to 150MHz) formats. It is an effective clock solution for video projectors and displays at resolutions from VGA to beyond XGA. The advanced phase-locked loop utilizes either its internal programmable feed-backed divider or an external divider. The device is programmed by a standard I^2C – bus ^{TM} serial interface. ICS1523 adopts external feedback method to create the sampling clock to provide the A/D converter (AD9483). When external divider changes the divisor, the sampling clock frequency is changed.

The *TLC2933* is designed for phase-locked-loop systems and is composed of a voltage-controlled oscillator (VCO) and an edge-triggered-type phase frequency detector (PFD). The Oscillator frequency range of VCO is set by an external bias resistor (R07). The high-speed PFD with internal charge pump detects the phase difference between the reference frequency input and signal frequency input from the external divider. The main purpose of TLC2933 is create the dot clock to the panel.

THEORY OF CIRCUIT OPERATION

POWER SYSTEM



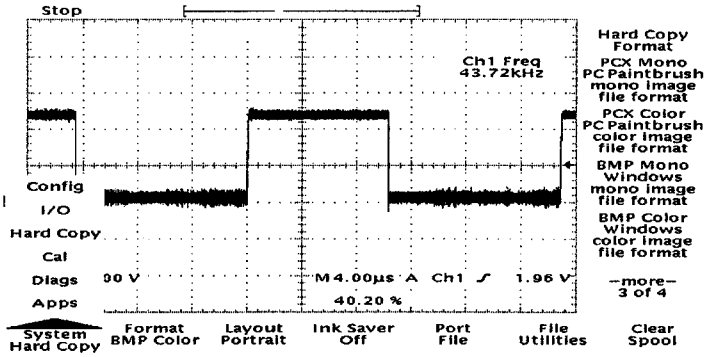
VG175 uses an external power adapter to provide the DC+12 Volts for generating +5 Volts and –5 Volts power sources. The IC18 is the main power MDS for system main switch. Power2 is directly connected to the keypad board. When users press the "power key", Power2 will short to Ground and IC18 will turn on immediately. ICP01 and ICP08 are the main components of the +5 Volts switching regulator. +5VS1 is the output of the regulator and it will supply power to the system following an overvoltage protector which is applied with IC32 and IC12. Consequently, +5VX will never be over +6 Volts and it will supply the devices that will be turned off during power saving, e.g., MPU(IC25), and a couple of devices which run the Sync processor.

Conversely, the +5V, VLCD and 12V will be turned off during power saving to reduce power consumption. Similar to the +5VX, the +5V and VLCD also have an over-voltage protector. When the system goes into power saving mode, the PS-EN will be pulled up to a high level by MPU, and the BL-EN (the enable signal of Backlight) will also switch to a high level for turning off the backlight. Most ICs in the system which require heavy power use +5V such as ADC(IC08), scaling IC(IC02), and PLL(IC03, IC09).

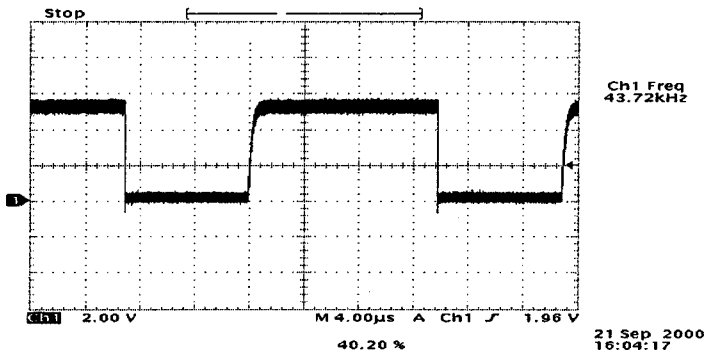
The VLCD is the main power for the LCD panel with the smart power system. The VG175 provides excellent performance with low power consumption in power saving mode.

WAVEFORMS

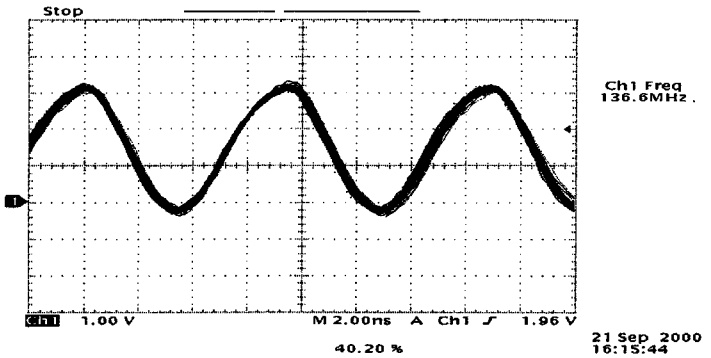
CONTROL IC31 CONTRAST (IC25 AT PIN 32)



CONTROL IC31 BRIGHTNESS (IC25 AT PIN 35)

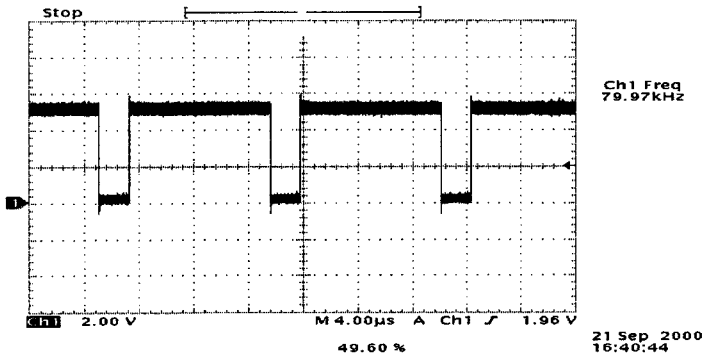


ADC ENCODE (IC09 AT PIN 21)

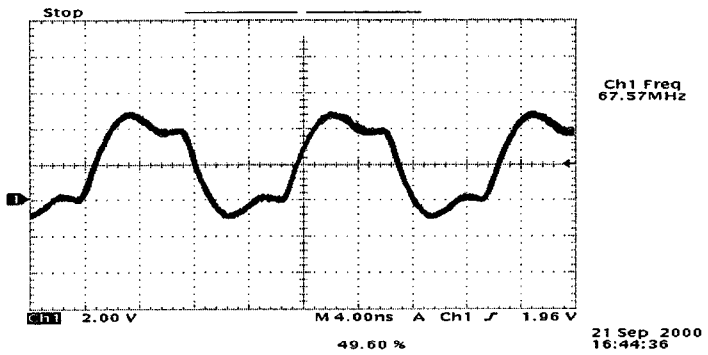


WAVEFORMS

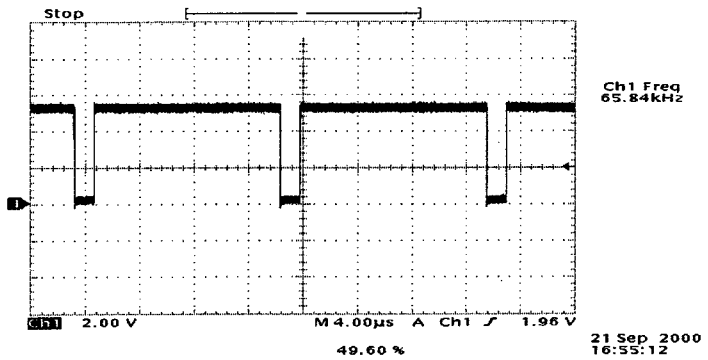
FCLK1 (IC02 AT PIN 44)



DATA-SEL (IC08 AT PIN 9)

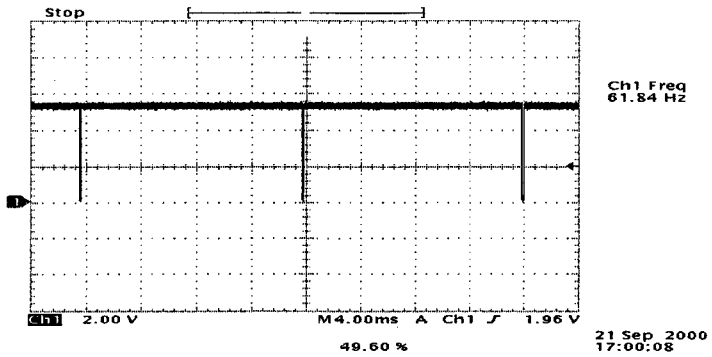


FREE RUNNING H-SYNC (IC02 AT PIN 39)

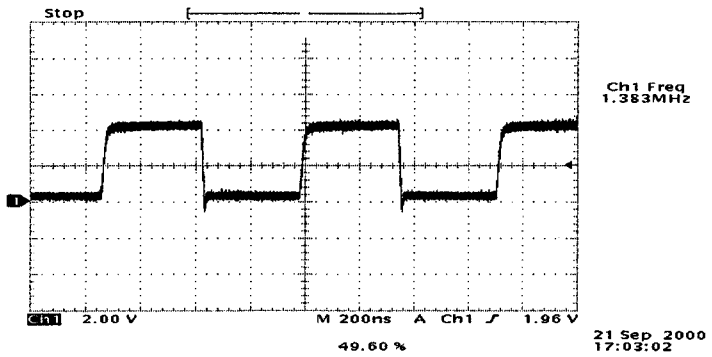


WAVEFORMS

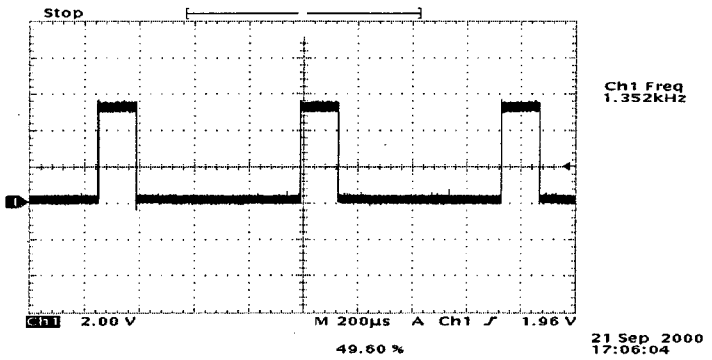
FREE RUNNING V-SYNC (IC02 AT PIN 40)



CLK-1M (IC02 AT PIN 26)

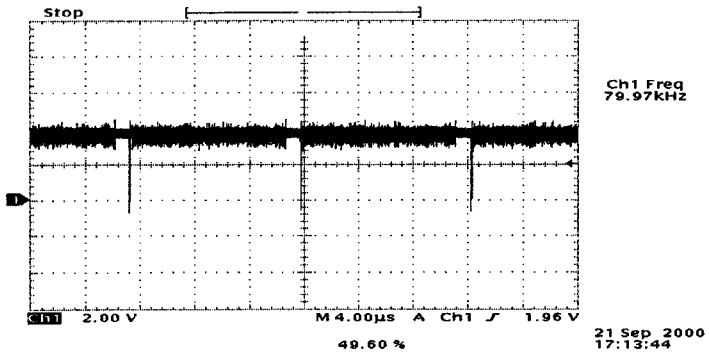


PWM-CTL (IC02 AT PIN 25)

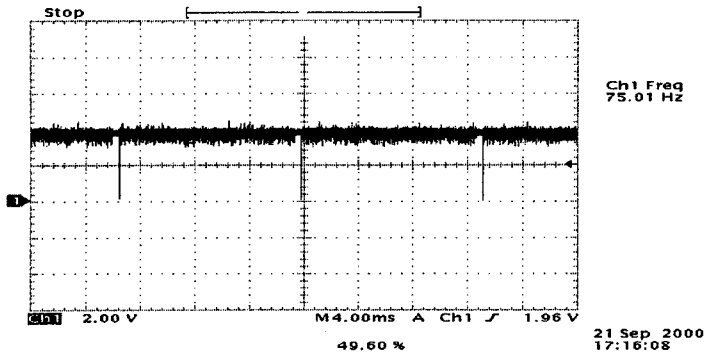


WAVEFORMS

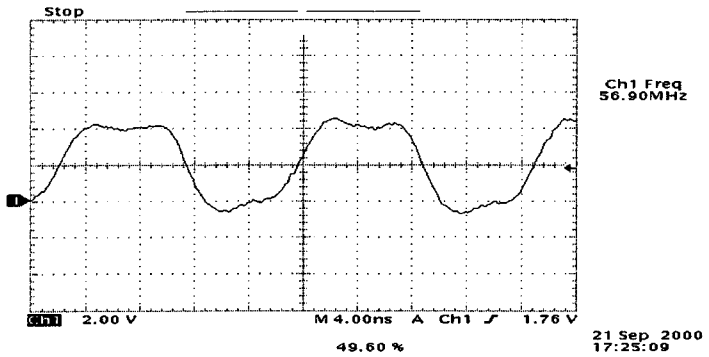
H-SYNC-0 (IC02 AT PIN 46)



V-SYNC-0 (IC02 AT PIN 47)

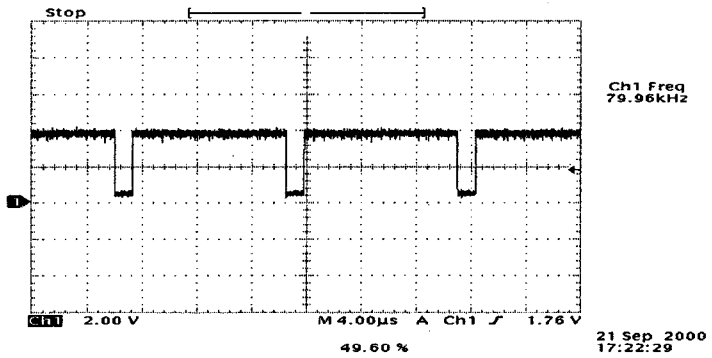


DCLK-OUT (IC02 AT PIN 48)



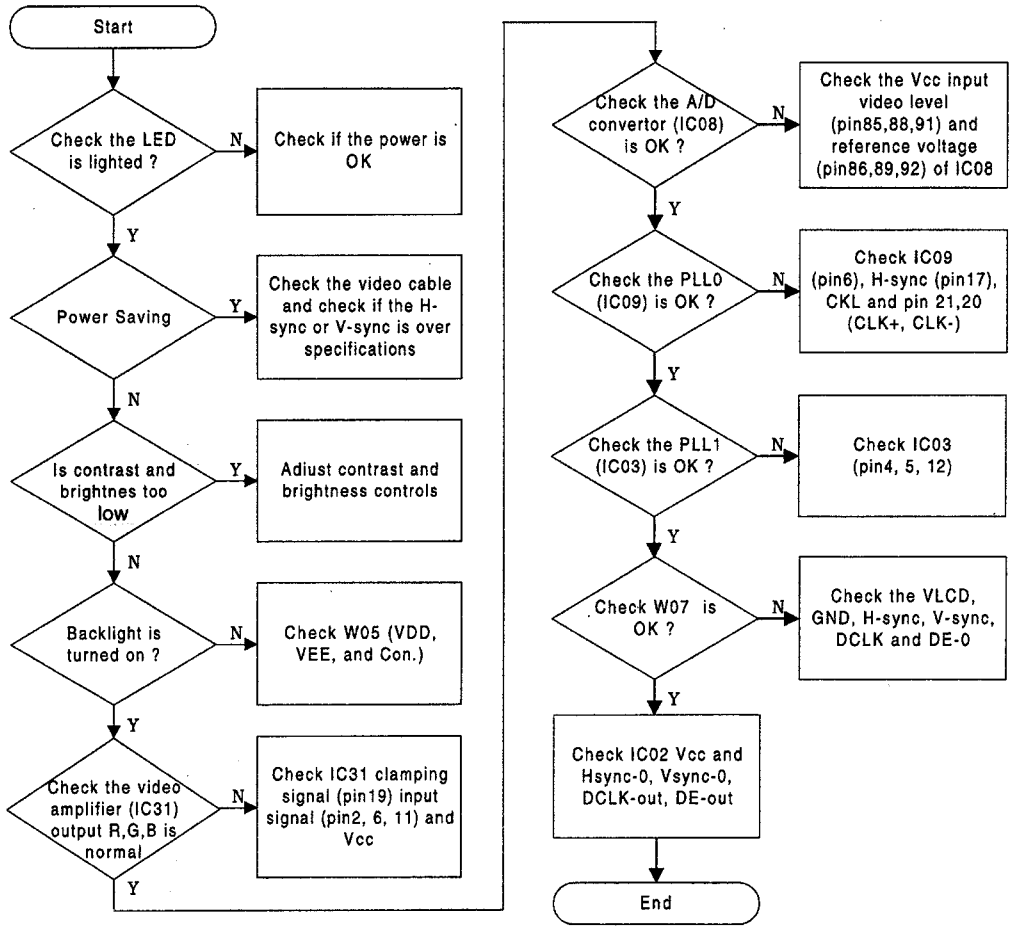
WAVEFORMS

DATA ENABLE (IC02 AT PIN 49)



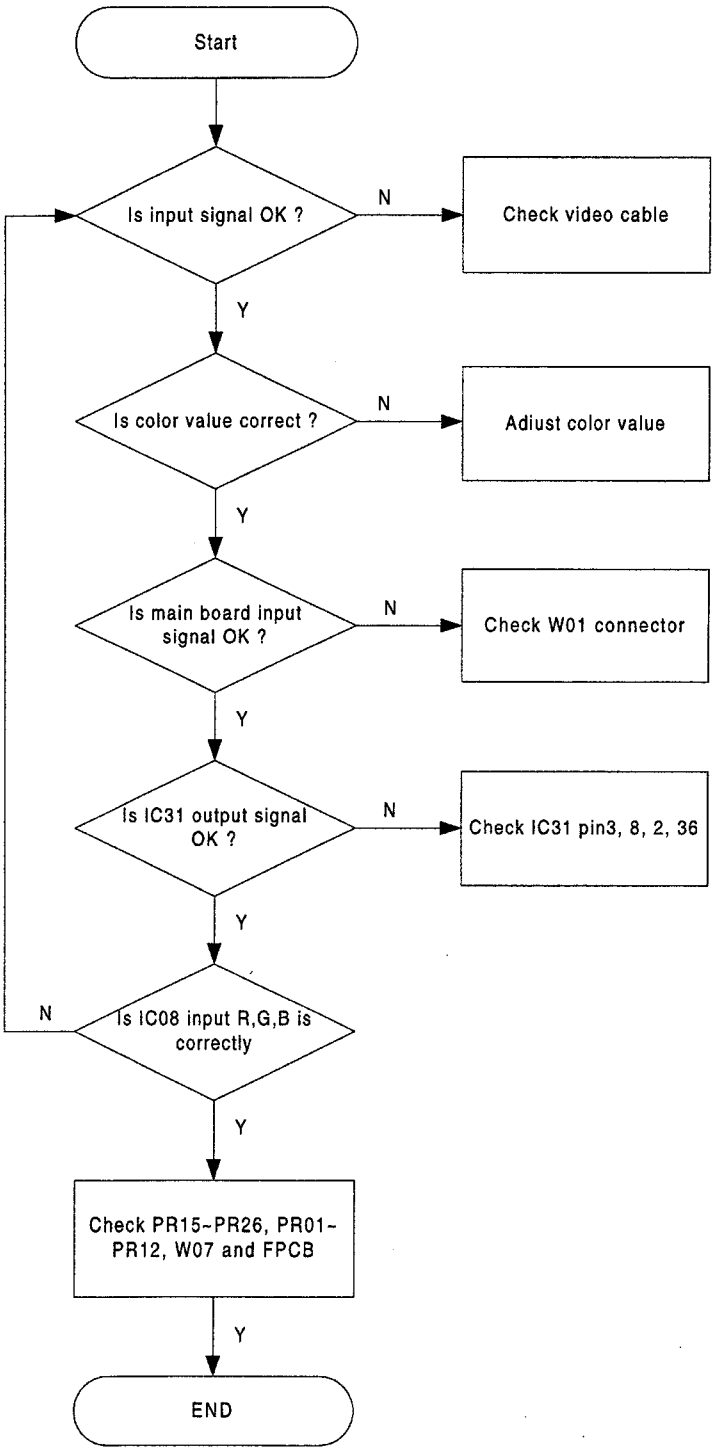
TROUBLE SHOOTING

VIDEO DOES NOT APPEAR



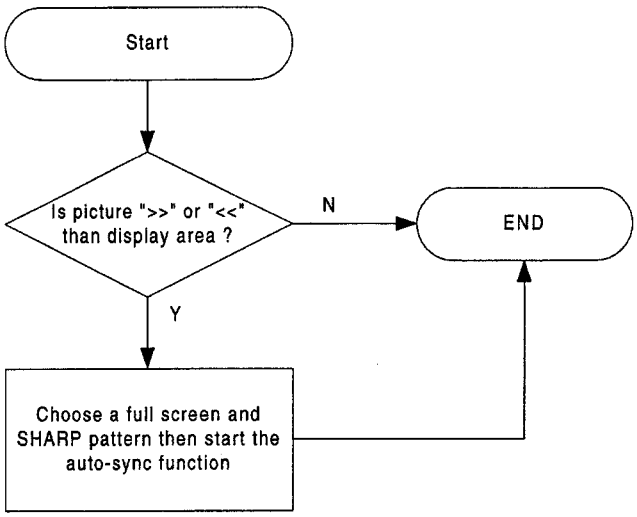
TROUBLE SHOOTING

R, G, B Is Not Displayed Correctly



TROUBLE SHOOTING

IMPROPER RESOLUTION



SPARE PARTS LIST

PART NO	DESCRIPTION	LOC	QTY
0130-0508-1859	RES. CF 0.5ohm 1/8W J 1206	R130, R86	2
0130-1008-1859	RES. CF 1.0ohm 1/8W J 1206	RP13	1
0130-1009-1859	RES. CF 10ohm 1/8W J 1206	R195, R85	2
0130-2208-1250	RES. CF 2.2ohm 1/2W J A	R223	1
0130-2208-1859	RES. CF 2.2ohm 1/8W J 1206	L30, L31	2
0130-4708-1859	RES. CF 4.7ohm 1/8W J 1206	R66	1
0133-0158-0152	RES. MOF (M) 0.15ohm 1W J A-FK	RP05, RP06	2
0183-1402-8544	MODULE PROTECTOR 4A 65V 8.5*4.0 (398)	F1	1
0300-7012-4023	AC TO DC ADAPTOR 12V/5A (UP06041120)		1
0320-3400-0010	POWER CORD 6ft 220V VDE		1
0320-4400-0010	POWER CORD 6ft 110V UL/CSA AL		1
0321-0400-0060	S.CABLE 1800mm 15(3R-3R) 3+6C / PC99		1
0410-5000-1610	TRANSISTOR MMBT3904LT1 SMD T	Q02,Q03, 05~Q10, Q13, Q19~Q22, Q26, Q25, QP02	16
0420-1001-3601	POWER MOS IRF7304 SMD 8PIN	ICP02	1
0420-1001-6601	POWER MOS IRF7316TR SMD 8PIN	IC12, IC18	2
0420-2000-1606	POWER MOS HAT1025R SMD 8PIN	IC34	1
0460-2900-0261	WH FPCB 80-80P 106.3*110.5mm 1/1Z		1
0500-0101-0190	INVERTER DC-AC (TAD509)		1
1701-0106-5011	FRONT PANEL CAB. PC+ABS G7397 (VA800)		1
1701-0106-5021	FRONT PANEL CAB. PC+ABS G7397 (VG175)		1
1925-1000-0580	EPE FOAM-A		1
1925-1000-0590	EPE FOAM-B		1
1925-1000-0650	EPE FOAM-HOLDER		1
1925-1200-1990	CARTON ViewSonic VG175		1
1925-1200-2010	CARTON ViewSonic VA800		1
1925-1300-2050	MANUAL ViewSonic VG175		1
1925-1300-2060	MANUAL ViewSonic VA800		1
3174-0012-0150	LCD 17.4" MAIN BD ASS'Y		1
3174-0012-0156	LCD 17.4" DISPLAY BD ASS'Y		1
3174-0012-0305	LCD REAR COVER ASS'Y		1
3174-0032-0150	LCD 17.4" MAIN BD ASS'Y		1
3180-0022-0334	LCD BASE ASS'Y		1

COMPLETE PARTS LIST

MODULE NO. 2500-3316-0041 LCD MONITOR 17.4" (**VG175**)					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
1	M	317400320331	LCD PANEL ASS'Y (VG175)	ASMO01	1
2	M	318000220334	LCD BASE ASS'Y	ASMO02	1
3	M	317400320312	LCD PACKING ASS'Y (VG175)	ASMO03	1

MODULE NO. 3174-0012-0312 LCD PACKING ASS'Y					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
1	M	030070124023	AC TO DC ADAPTOR 12V/5A (UP06041120)	AD01	1
2	M	192511000080	PE BAG 550*800*0.04T	PA01	1
3	M	192510000580	EPE FOAM-A (VG181)	PA02	1
4	M	192510000590	EPE FOAM-B (VG181)	PA03	1
5	M	192512001130	ACCESSARY BOX (320WX195DX60H)	PA04	1
6	M	192510000650	EPE FOAM-HOLDER (VG181)	PA05	1
7	M	194716000080	.INF&.ICM CD ROM	PA06	1
8	M	192513002060	MANUAL ViewSonic VA800	PA07	1
9	M	192512002010	CARTON ViewSonic VA800	PA08	1
10	M	194716000104	PORTRAIT CD-ROM	PA09	1
11	M	193611002370	B/C LBL VA800 FOR USA	PA10	1
12	M	032044000010	POWER CORD 6FT 110V UL/CSA AL	PC01	1
13	M	032034000010	POWER CORD 6FT 220V VDE	PC02	1
14	M	032104000060	S.CABLE 1800mm 15(3R-3R) 3+6C / PC99	SG01	1

COMPLETE PARTS LIST

MODULE NO. 3174-0012-0331 LCD PANEL ASS'Y					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
15	M	194717000020	SHIELDING AL. TAPE (45.0*25.0)		2
16	M	194717000050	SHIELDING AL. TAPE (50.0*40.0)		2
17	M	194717000260	GASKET BLOCK (10.0*10.5*60.0mm)		8
18	M	194717000270	GASKET BLOCK (7.0*4.0*20mm)		2
19	M	170101065011	Front Panel Cab. PC+ABS G7397 (VA800)	FP01	1
20	M	193610000060	V.SONIC LOGO-B (AL.PLATE)	FP01M	1
21	M	170104061000	FUNCTION BUTTON (VA800)	FP02	1
22	M	170104062001	POWER BUTTON (VA800)	FP03	1
23	M	170107000050	LED LENS (VG150)	FP04	1
24	M	317400120156	LCD DISPLAY BD ASS'Y (VA800)	FP05	1
25	M	172100031020	TAP. SCREW-TB #3.0*10.0L,NI	FP05M	1
26	M	021101740165	LCD MODULE 17.4" TFT FLC44SXC8V FUJ.	FP06	1
27	M	172005031210	MAC.SCREW-MBSFW M3.0*12.0L.Zn-Cc	FP06M	4
28	M	171201001460	FRAME BRACKET (VA800)	FP07	1
29	M	172100031020	TAP. SCREW-TB #3.0*10.0L,NI	FP07M	1
30	M	171201001470	SUPPORT BRACKET FOR M/B (VA800)	FP08	1
31	M	172000030410	MAC. SCREW-MB M3.0*4.0L,ZN-CC	FP08M	1
32	M	317400120150	LCD 17.4" MAIN BD ASS'Y	FP09	1
	CS	317400320150	LCD 17.4" MAIN BD ASS'Y		
33	M	172000030410	MAC. SCREW-MB M3.0*4.0L,ZN-CC	FP09M	1
34	M	171205000470	SHIELD FOR M/B (VA800)	FP10	1
35	M	172000030410	MAC. SCREW-MB M3.0*4.0L,ZN-CC	FP10M	1
36	M	050001010190	INVERTER DC-AC (TAD509)	FP11	1
37	M	172000030410	MAC. SCREW-MB M3.0*4.0L,ZN-CC	FP11M	1
38	M	318000220339	LCD INVERTER SHIELD ASS'Y	FP12	1
39	M	172000030410	MAC. SCREW-MB M3.0*4.0L,ZN-CC	FP12M	23
40	M	317400120305	LCD REAR COVER ASS'Y	FP13	1
41	M	172100031020	TAP. SCREW-TB #3.0*10.0L,NI	FP13M	20
42	M	170109000150	I/O PORT PLATE (VA800)	FP13N	1
43	M	172050041020	MAC. SCREW-MI M4.0*10.0L,NI	FP13O	4
44	M	172110042010	TAP. SCREW-TP #4.0X20.0L, ZN-CC	FP13P	2

COMPLETE PARTS LIST

MODULE NO. 3174-0012-0331 LCD PANEL ASS'Y					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
45	M	193615000300	HI-VOLTAGE LBL	FP14	1
46	M	046010090090	WH PH9P-PH9P 1061#26 480mm core*1	FP16	1
47	M	046029000261	WH FPCB 80-80P 106.3*110.5mm 1/1Z Core*1	FP17	1
48	M	170115000030	WIRE SADDLE (CH-01C)	FP18	5
49	M	171207000050	SPRING (VP150m)	FP19	1
50	M	193616000121	POP LBL V.SONIC VA800	FP20	1
51	M	170115000180	SPACER SUPPORT (DCBS-5)	FP21	1
52	M	046010050100	WH PH5P-PH5P 1007#24 280mm CORE*1	FP22	1
53	M	194717000190	GASKET BLOCK (20.0*10.0*10.0)	FP27	1
54	M	194717000130	SHIELDING AL.TAPE (70.0*50.0)	FP29	1

MODULE NO. 3180-0022-0334 LCD BASE ASS'Y					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
55	M	170105036000	SWIVEL CAP	BS01	1
56	M	170105037000	REAR HOUSING CAP	BS02	1
57	M	170105038000	REAR HOUSING HOLDER	BS03	1
58	M	318000120014	NECK-BASE ASS'Y	BS04	1
59	M	318000120025	PIVOT PLATE ASS'Y	BS05	1

MODULE NO. 3174-0012-0150 LCD MAIN BD ASS'Y					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
60	M	010111021212	E/C GEN. 1000uF 16V 105'K	CP01	1
61	M	010111021212	E/C GEN. 1000uF 16V 105'K	CP02	1
62	M	010111021212	E/C GEN. 1000uF 16V 105'K	CP03	1
63	M	010114711211	E/C GEN. 470uF 16V 105' F	CP04	1
64	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	CP06	1
65	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	CP07	1
66	M	011133315105	C/M Multi. 330PF 50V NPO 0805	CP08	1
67	M	011131025105	C/M Multi 1000PF 50V NPO 0805	CP10	1

COMPLETE PARTS LIST

MODULE NO. 3174-0012-0150 LCD MAIN BD ASS'Y					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
68	M	010114701204	E/C GEN. 47uF 16V RV2 SMD	C01	1
69	M	013047001858	RES. CF 470ohm 1/8W J 0805	C02	1
70	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C03	1
71	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C04	1
72	M	010114711211	E/C GEN. 470uF 16V 105' F	C05	1
73	M	011132205105	C/M Multi. 22PF 50V NPO 0805	C06	1
74	M	011132205105	C/M Multi. 22PF 50V NPO 0805	C07	1
75	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C08	1
76	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C09	1
77	M	010111091504	E/C GEN. 1.0uF 50V RV2 SMD	C10	1
78	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C100	1
79	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C101	1
80	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C102	1
81	M	011131015105	C/M Multi. 100PF 50V NPO 0805	C103	1
82	M	010114791304	E/C GEN. 4.7uF 25V RV2 SMD	C104	1
83	M	011132215105	C/M Multi. 220PF 50V NPO 0805	C105	1
84	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C107	1
85	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C108	1
86	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C109	1
87	M	011131505105	C/M Multi. 15PF 50V NPO 0805	C110	1
88	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C116	1
89	M	011131505105	C/M Multi. 15PF 50V NPO 0805	C117	1
90	M	010111021212	E/C GEN. 1000uF 16V 105'K	C118	1
91	M	011132205105	C/M Multi. 22PF 50V NPO 0805	C119	1
92	M	010114711312	E/C GEN. 470uF 25V 105' K	C12	1
93	M	010114711211	E/C GEN. 470uF 16V 105' F	C120	1
94	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C121	1
95	M	010114701104	E/C GEN. 47uF 10V RV2 SMD	C123	1
96	M	010114701104	E/C GEN. 47uF 10V RV2 SMD	C124	1
97	M	010114711211	E/C GEN. 470uF 16V 105' F	C125	1
98	M	011133305105	C/M Multi. 33PF 50V NPO 0805	C127	1

COMPLETE PARTS LIST

MODULE NO. 3174-0012-0150 LCD MAIN BD ASS'Y					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
99	M	011133305105	C/M Multi. 33PF 50V NPO 0805	C128	1
100	M	011133305105	C/M Multi. 33PF 50V NPO 0805	C129	1
101	M	010113311211	E/C GEN. 330uF 16V 105' F	C13	1
102	M	011131005105	C/M Multi. 10PF 50V NPO 0805	C130	1
103	M	011134705105	C/M Multi. 47PF 50V NPO 0805	C131	1
104	M	011134705105	C/M Multi. 47PF 50V NPO 0805	C132	1
105	M	011131505105	C/M Multi. 15PF 50V NPO 0805	C133	1
106	M	011131505105	C/M Multi. 15PF 50V NPO 0805	C134	1
107	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C135	1
108	M	010111001204	E/C GEN. 10uF 16V RV2 SMD	C137	1
109	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C138	1
110	M	010111001204	E/C GEN. 10uF 16V RV2 SMD	C139	1
111	M	011131015105	C/M Multi. 100PF 50V NPO 0805	C14	1
112	M	011134705105	C/M Multi. 47PF 50V NPO 0805	C140	1
113	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C141	1
114	M	011132205105	C/M Multi. 22PF 50V NPO 0805	C142	1
115	M	011132205105	C/M Multi. 22PF 50V NPO 0805	C143	1
116	M	010111001204	E/C GEN. 10uF 16V RV2 SMD	C144	1
117	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C145	1
118	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C146	1
119	M	010113311211	E/C GEN. 330uF 16V 105' F	C15	1
120	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C150	1
121	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C151	1
122	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C152	1
123	M	010114711211	E/C GEN. 470uF 16V 105' F	C153	1
124	M	010114711211	E/C GEN. 470uF 16V 105' F	C154	1
125	M	010114711211	E/C GEN. 470uF 16V 105' F	C155	1
126	M	010113311211	E/C GEN. 330uF 16V 105' F	C156	1
127	M	010111011211	E/C GEN. 100uF 16V 105' F	C157	1
128	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C159	1
129	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C16	1

COMPLETE PARTS LIST

MODULE NO. 3174-0012-0150 LCD MAIN BD ASS'Y					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
130	M	011132205105	C/M Multi. 22PF 50V NPO 0805	C160	1
131	M	010111021212	E/C GEN. 1000uF 16V 105'K	C161	1
132	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C162	1
133	M	011131015105	C/M Multi. 100PF 50V NPO 0805	C163	1
134	M	011131505105	C/M Multi. 15PF 50V NPO 0805	C164	1
135	M	011131505105	C/M Multi. 15PF 50V NPO 0805	C165	1
136	M	010111011211	E/C GEN. 100uF 16V 105' F	C166	1
137	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C167	1
138	M	011131035115	C/M Multi. 0.01uF 50V X7R 0805	C168	1
139	M	011131035115	C/M Multi. 0.01uF 50V X7R 0805	C169	1
140	M	011131005105	C/M Multi. 10PF 50V NPO 0805	C17	1
141	M	010112201204	E/C GEN. 22uF 16V RV2 SMD	C170	1
142	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C175	1
143	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C176	1
144	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C177	1
145	M	011111045102	C/C DISK 0.1uF 50V Y5V F-K	C178	1
146	M	011111045102	C/C DISK 0.1uF 50V Y5V F-K	C179	1
147	M	011131005105	C/M Multi. 10PF 50V NPO 0805	C18	1
148	M	011111045102	C/C DISK 0.1uF 50V Y5V F-K	C180	1
149	M	011131035115	C/M Multi. 0.01uF 50V X7R 0805	C181	1
150	M	011131035115	C/M Multi. 0.01uF 50V X7R 0805	C182	1
151	M	011131035115	C/M Multi. 0.01uF 50V X7R 0805	C183	1
152	M	011131035115	C/M Multi. 0.01uF 50V X7R 0805	C184	1
153	M	010111091504	E/C GEN. 1.0uF 50V RV2 SMD	C19	1
154	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C198	1
155	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C199	1
156	M	011132225115	C/M Multi. 2200PF 50V X7R 0805	C20	1
157	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C200	1
158	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C201	1
159	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C202	1
160	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C203	1

COMPLETE PARTS LIST

MODULE NO. 3174-0012-0150 LCD MAIN BD ASS'Y					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
161	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C204	1
162	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C205	1
163	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C206	1
164	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C207	1
165	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C208	1
166	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C209	1
167	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C21	1
168	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C210	1
169	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C211	1
170	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C212	1
171	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C213	1
172	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C214	1
173	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C215	1
174	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C216	1
175	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C217	1
176	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C218	1
177	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C219	1
178	M	010114701204	E/C GEN. 47uF 16V RV2 SMD	C22	1
179	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C220	1
180	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C221	1
181	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C23	1
182	M	010111021212	E/C GEN. 1000uF 16V 105'K	C24	1
183	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C25	1
184	M	011131005105	C/M Multi. 10PF 50V NPO 0805	C26	1
185	M	011131005105	C/M Multi. 10PF 50V NPO 0805	C29	1
186	M	011132215105	C/M Multi. 220PF 50V NPO 0805	C30	1
187	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C31	1
188	M	010113311211	E/C GEN. 330uF 16V 105' F	C32	1
189	M	011131015105	C/M Multi. 100PF 50V NPO 0805	C34	1
190	M	010113311211	E/C GEN. 330uF 16V 105' F	C35	1
191	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C36	1

COMPLETE PARTS LIST

MODULE NO. 3174-0012-0150 LCD MAIN BD ASS'Y					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
192	M	010114701204	E/C GEN. 47uF 16V RV2 SMD	C37	1
193	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C38	1
194	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C39	1
195	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C40	1
196	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C41	1
197	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C42	1
198	M	010114701204	E/C GEN. 47uF 16V RV2 SMD	C43	1
199	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C44	1
200	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C45	1
201	M	010114701104	E/C GEN. 47uF 10V RV2 SMD	C46	1
202	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C47	1
203	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C48	1
204	M	011133315105	C/M Multi. 330PF 50V NPO 0805	C49	1
205	M	011131005105	C/M Multi. 10PF 50V NPO 0805	C50	1
206	M	010112201204	E/C GEN. 22uF 16V RV2 SMD	C500	1
207	M	010112201204	E/C GEN. 22uF 16V RV2 SMD	C501	1
208	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C52	1
209	M	011131015105	C/M Multi. 100PF 50V NPO 0805	C54	1
210	M	010114701104	E/C GEN. 47uF 10V RV2 SMD	C55	1
211	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C56	1
212	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C57	1
213	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C58	1
214	M	010114711211	E/C GEN. 470uF 16V 105' F	C60	1
215	M	010114701204	E/C GEN. 47uF 16V RV2 SMD	C61	1
216	M	011132205105	C/M Multi. 22PF 50V NPO 0805	C62	1
217	M	011132205105	C/M Multi. 22PF 50V NPO 0805	C63	1
218	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C64	1
219	M	010111091504	E/C GEN. 1.0UF 50V RV2 SMD	C65	1
220	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C66	1
221	M	010111091504	E/C GEN. 1.0uF 50V RV2 SMD	C67	1
222	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C68	1

COMPLETE PARTS LIST

MODULE NO. 3174-0012-0150 LCD MAIN BD ASS'Y					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
223	M	010111091504	E/C GEN. 1.0uF 50V RV2 SMD	C69	1
224	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C70	1
225	M	010113311211	E/C GEN. 330uF 16V 105' F	C71	1
226	M	010113311211	E/C GEN. 330uF 16V 105' F	C74	1
227	M	010111021212	E/C GEN. 1000uF 16V 105'K	C75	1
228	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C76	1
229	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C81	1
230	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C83	1
231	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C85	1
232	M	010113311211	E/C GEN. 330uF 16V 105' F	C86	1
233	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C87	1
234	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C89	1
235	M	010114711211	E/C GEN. 470uF 16V 105' F	C90	1
236	M	010112201204	E/C GEN. 22uF 16V RV2 SMD	C91	1
237	M	010121001501	E/C B-P 10uF 50V 85'F	C92	1
238	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C93	1
239	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C94	1
240	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C95	1
241	M	011131015105	C/M MULTI 100PF 50V NPO 0805	C96	1
242	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C97	1
243	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C98	1
244	M	011131045135	C/M Multi. 0.1uF 50V Y5V 0805	C99	1
245	M	039060009172	SCHOTTKY DIODE SB340 T	DP02	1
246	M	039050001053	GEN. DIODE 1N4148 SMD	DP03	1
247	M	039060010012	SCHOTTKY DIODE 1A 40V (11EQS04) T	DP04	1
248	M	039050001053	GEN. DIODE 1N4148 SMD	D02	1
249	M	039050018203	DUAL SURFACE DIODE BAV70 SMD	D03	1
250	M	039050018203	DUAL SURFACE DIODE BAV70 SMD	D04	1
251	M	039050001053	GEN. DIODE 1N4148 SMD	D05	1
252	M	039050001053	GEN. DIODE 1N4148 SMD	D06	1
253	M	039050019203	DUAL SURFACE DIODE BAV99 SMD	D07	1

COMPLETE PARTS LIST

MODULE NO. 3174-0012-0150 LCD MAIN BD ASS'Y					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
254	M	039050019203	DUAL SURFACE DIODE BAV99 SMD	D08	1
255	M	039050017203	DUAL SURFACE DIODE BAW56 SMD	D09	1
256	M	039050019203	DUAL SURFACE DIODE BAV99 SMD	D10	1
257	M	039050018203	DUAL SURFACE DIODE BAV70 SMD	D11	1
258	M	039050018203	DUAL SURFACE DIODE BAV70 SMD	D12	1
259	M	039050018203	DUAL SURFACE DIODE BAV70 SMD	D13	1
260	M	039050018203	DUAL SURFACE DIODE BAV70 SMD	D14	1
261	M	039050001053	GEN. DIODE 1N4148 SMD	D15	1
262	M	039050001053	GEN. DIODE 1N4148 SMD	D17	1
263	M	039050017203	DUAL SURFACE DIODE BAW56 SMD	D18	1
264	M	039050001053	GEN. DIODE 1N4148 SMD	D19	1
265	M	039050001053	GEN. DIODE 1N4148 SMD	D20	1
266	M	039050001052	GEN. DIODE 1N4148 T	D21	1
267	M	039050019203	DUAL SURFACE DIODE BAV99 SMD	D23	1
268	M	039050001053	GEN. DIODE 1N4148 SMD	D24	1
269	M	039050001052	GEN. DIODE 1N4148 T	D26	1
270	M	039050001053	GEN. DIODE 1N4148 SMD	D44	1
271	M	039050001053	GEN. DIODE 1N4148 SMD	D500	1
272	M	039050001053	GEN. DIODE 1N4148 SMD	D501	1
273	M	039050001053	GEN. DIODE 1N4148 SMD	D600	1
274	M	039050001053	GEN. DIODE 1N4148 SMD	D601	1
275	M	018314028544	Module Protector 4A 65V 8.5*4.0 (398)	F1	1
276	M	042010013601	POWER MOS IRF7304 SMD 8PIN	ICP01	1
277	M	043080006151	IC AMC7660 DIP 8PIN	ICP02	1
278	M	043080006151	IC AMC7660 DIP 8PIN	ICP04	1
279	M	043010033604	IC 74LCX245MTCX SMD 20PIN (TSSOP)	IC01	1
280	M	043070034939	IC AM120 SMD 160PIN (PQFP)	IC02	1
281	M	171204000170	HEAT SINK (27.0W*27.0D*9.0H)	IC02S	1
282	M	043070006015	IC TLC2933IPWR SMD 14PIN (TSSOP)	IC03	1
283	M	043070043040	IC MTV118P-30 SMD 16PIN	IC04	1
284	M	043030002017	IC MP24LC21AT/SN SMD 8PIN	IC05	1

COMPLETE PARTS LIST

MODULE NO. 3174-0012-0150 LCD MAIN BD ASS'Y					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
285	M	043010001004	IC MM74HC00M SMD 14PIN	IC06	1
286	M	043030004143	IC HT24C08 DIP 8PIN	IC07	1
287	M	020125408000	IC SOCKET 2.54MM 8PIN	IC07S	1
288	M	043080002846	IC AD9483KS-140 SMD 100PIN (MQFP)	IC08	1
289	M	043040056028	IC ICS1523M SMD 24PIN	IC09	1
290	M	043000008004	IC MM74HC4053WMX SMD 16PIN	IC10	1
291	M	043060004307	IC TL431CZ TO-92 T	IC11	1
292	M	042010016601	POWER MOS IRF7316TR SMD 8PIN	IC12	1
293	M	043030002017	IC MP24LC21AT/SN SMD 8PIN	IC14	1
294	M	043010030004	IC DM74LS14MX SMD 14PIN	IC15	1
295	M	043000008004	IC MM74HC4053WMX SMD 16PIN	IC16	1
296	M	043010005005	IC 74HC86AFN SMD-14 T	IC17	1
297	M	042010016601	POWER MOS IRF7316TR SMD 8PIN	IC18	1
298	M	043010026604	IC 74VHC245 SMD 20PIN (TSSOP)	IC19	1
299	M	043010019004	IC DM74LS393 SMD-14	IC20	1
300	M	043010007004	IC 74HC14 SMD-14	IC21	1
301	M	043010007004	IC 74HC14 SMD-14	IC23	1
302	M	043030008111	IC AT24C16-10PC DIP 8PIN	IC24	1
303	M	020125408000	IC SOCKET 2.54MM 8PIN	IC24S	1
304	M	043050024140	IC MTV112N DIP 40PIN (OTP)	IC25	1
305	M	020125440000	IC SOCKET 2.54MM 40PIN	IC25S	1
306	M	043040006007	IC LM324DT SMD-14 PIN	IC26	1
307	M	043060003207	IC LM7805 TO-220 3 PIN	IC27	1
308	M	043040049402	IC M52743BSP SDIP 36PIN	IC31	1
309	M	043040002004	IC LM339M SMD-14 T	IC32	1
310	M	043060004307	IC TL431CZ TO-92 T	IC33	1
311	M	042020001606	POWER MOS HAT1025R SMD 8PIN	IC34	1
312	M	043070044319	IC PST994D TO-92 3PIN D=4.2V	IC500	1
313	M	023025080000	JUMPER WIRE 2.5*0.6MM	JP01	1
314	M	036110000120	DRUM CORE L:70UH 2A(10*16)	LP1	1
315	M	036110000190	CHOKE COIL L:160uH 150mA (11*14)	LP25	1

COMPLETE PARTS LIST

MODULE NO. 3174-0012-0150 LCD MAIN BD ASS'Y					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
316	M	037000001010	FERRITE CORE RH 3.5X6X1.0(W)X2	LP3	1
317	M	034468800603	PEAKING COIL 0.68UH 1/4W K 2012	L01	1
318	M	037000003552	Chip Bead Core 30ohm MLB-201209-0030A-N1	L03	1
319	M	037000003552	Chip Bead Core 30ohm MLB-201209-0030A-N1	L04	1
320	M	037000003552	Chip Bead Core 30ohm MLB-201209-0030A-N1	L05	1
321	M	037000003552	Chip Bead Core 30ohm MLB-201209-0030A-N1	L06	1
322	M	037000001110	FERRITE CORE W8 R6H 6X10 2 1/2 T	L07	1
323	M	034468800603	PEAKING COIL 0.68UH 1/4W K 2012	L08	1
324	M	013027001858	RES. CF 270ohm 1/8W J 0805	L09	1
325	M	037000003552	Chip Bead Core 30ohm MLB-201209-0030A-N1	L10	1
326	M	034468800603	PEAKING COIL 0.68UH 1/4W K 2012	L11	1
327	M	037000003552	Chip Bead Core 30ohm MLB-201209-0030A-N1	L12	1
328	M	034468800603	PEAKING COIL 0.68UH 1/4W K 2012	L13	1
329	M	011131045135	C/M MULTI 0.1UF 50V Y5V 0805	L14	1
330	M	034468800603	PEAKING COIL 0.68UH 1/4W K 2012	L15	1
331	M	034468800603	PEAKING COIL 0.68UH 1/4W K 2012	L16	1
332	M	013122191818	RES. MF 22.1ohm 1/8W F 0805	L20	1
333	M	013000001859	RES. CF 0.0ohm 1/8W J 1206	L21	1
334	M	037000001110	FERRITE CORE W8 R6H 6X10 2 1/2 T	L22	1
335	M	013000001858	RES. CF 0.0ohm 1/8W J 0805	L23	1
336	M	037000001110	FERRITE CORE W8 R6H 6X10 2 1/2 T	L24	1
337	M	034468800603	PEAKING COIL 0.68UH 1/4W K 2012	L25	1
338	M	013122191818	RES. MF 22.1ohm 1/8W F 0805	L26	1
339	M	013122191818	RES. MF 22.1ohm 1/8W F 0805	L27	1
340	M	013122191818	RES. MF 22.1ohm 1/8W F 0805	L28	1
341	M	013122191818	RES. MF 22.1ohm 1/8W F 0805	L29	1
342	M	013022081859	RES. CF 2.2ohm 1/8W J 1206	L30	1
343	M	013022081859	RES. CF 2.2ohm 1/8W J 1206	L31	1
344	M	013122191818	RES. MF 22.1ohm 1/8W F 0805	L33	1
345	M	037000005032	CHIP BEAD CORE 150ohm (FCM2012K-151T08)	L34	1
346	M	034468800603	PEAKING COIL 0.68UH 1/4W K 2012	L35	1

COMPLETE PARTS LIST

MODULE NO. 3174-0012-0150 LCD MAIN BD ASS'Y					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
347	M	037000005032	CHIP BEAD CORE 150ohm (FCM2012K-151T08)	L36	1
348	M	037000005032	CHIP BEAD CORE 150ohm (FCM2012K-151T08)	L37	1
349	M	037000005032	CHIP BEAD CORE 150ohm (FCM2012K-151T08)	L38	1
350	M	034468800603	PEAKING COIL 0.68UH 1/4W K 2012	L39	1
351	M	037000005032	CHIP BEAD CORE 150ohm (FCM2012K-151T08)	L40	1
352	M	013000001858	RES. CF 0.0ohm 1/8W J 0805	L41	1
353	M	017122420363	PCB MAIN BD 200*180*1.6t FR4 4M	PCB01	1
354	M	014156093851	ARRAY RES. A(X) 56ohm 4R J 8P	PR01	1
355	M	014156093851	ARRAY RES. A(X) 56ohm 4R J 8P	PR02	1
356	M	014156093851	ARRAY RES. A(X) 56ohm 4R J 8P	PR03	1
357	M	014156093851	ARRAY RES. A(X) 56ohm 4R J 8P	PR04	1
358	M	014156093851	ARRAY RES. A(X) 56ohm 4R J 8P	PR05	1
359	M	014156093851	ARRAY RES. A(X) 56ohm 4R J 8P	PR06	1
360	M	014156093851	ARRAY RES. A(X) 56ohm 4R J 8P	PR07	1
361	M	014156093851	ARRAY RES. A(X) 56ohm 4R J 8P	PR08	1
362	M	014156093851	ARRAY RES. A(X) 56ohm 4R J 8P	PR09	1
363	M	014156093851	ARRAY RES. A(X) 56ohm 4R J 8P	PR10	1
364	M	014156093851	ARRAY RES. A(X) 56ohm 4R J 8P	PR11	1
365	M	014156093851	ARRAY RES. A(X) 56ohm 4R J 8P	PR12	1
366	M	014110023851	ARRAY RES. A(X) 10Kohm 4R J 8P	PR13	1
367	M	014147003851	ARRAY RES. A(X) 470ohm 4R J 8P	PR14	1
368	M	014156093851	ARRAY RES. A(X) 56ohm 4R J 8P	PR15	1
369	M	014156093851	ARRAY RES. A(X) 56ohm 4R J 8P	PR16	1
370	M	014156093851	ARRAY RES. A(X) 56ohm 4R J 8P	PR17	1
371	M	014156093851	ARRAY RES. A(X) 56ohm 4R J 8P	PR18	1
372	M	014156093851	ARRAY RES. A(X) 56ohm 4R J 8P	PR19	1
373	M	014156093851	ARRAY RES. A(X) 56ohm 4R J 8P	PR20	1
374	M	014156093851	ARRAY RES. A(X) 56ohm 4R J 8P	PR21	1
375	M	014156093851	ARRAY RES. A(X) 56ohm 4R J 8P	PR22	1
376	M	014156093851	ARRAY RES. A(X) 56ohm 4R J 8P	PR23	1
377	M	014156093851	ARRAY RES. A(X) 56ohm 4R J 8P	PR24	1

COMPLETE PARTS LIST

MODULE NO. 3174-0012-0150 LCD MAIN BD ASS'Y					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
378	M	014156093851	ARRAY RES. A(X) 56ohm 4R J 8P	PR25	1
379	M	014156093851	ARRAY RES. A(X) 56ohm 4R J 8P	PR26	1
380	M	014110023851	ARRAY RES. A(X) 10Kohm 4R J 8P	PR27	1
381	M	014147013851	ARRAY RES. A(X) 4.7Kohm 4R J 8P	PR28	1
382	M	014147093851	ARRAY RES. A(X) 47ohm 4R J 8P	PR30	1
383	M	014110023851	ARRAY RES. A(X) 10Kohm 4R J 8P	PR31	1
384	M	041050001610	TRANSISTOR MMBT3904LT1 SMD T	QP02	1
385	M	041050002610	TRANSISTOR MMBT3906LT1 SMD	Q01	1
386	M	041050001610	TRANSISTOR MMBT3904LT1 SMD T	Q02	1
387	M	041050001610	TRANSISTOR MMBT3904LT1 SMD T	Q03	1
388	M	041050001610	TRANSISTOR MMBT3904LT1 SMD T	Q05	1
389	M	041050001610	TRANSISTOR MMBT3904LT1 SMD T	Q06	1
390	M	041050001610	TRANSISTOR MMBT3904LT1 SMD T	Q07	1
391	M	041050001610	TRANSISTOR MMBT3904LT1 SMD T	Q08	1
392	M	041050001610	TRANSISTOR MMBT3904LT1 SMD T	Q09	1
393	M	041050001610	TRANSISTOR MMBT3904LT1 SMD T	Q10	1
394	M	041050001610	TRANSISTOR MMBT3904LT1 SMD T	Q13	1
395	M	041050002610	TRANSISTOR MMBT3906LT1 SMD	Q15	1
396	M	041050001610	TRANSISTOR MMBT3904LT1 SMD T	Q19	1
397	M	041050001610	TRANSISTOR MMBT3904LT1 SMD T	Q20	1
398	M	041050001610	TRANSISTOR MMBT3904LT1 SMD T	Q21	1
399	M	041050001610	TRANSISTOR MMBT3904LT1 SMD T	Q22	1
400	M	041050001610	TRANSISTOR MMBT3904LT1 SMD T	Q25	1
401	M	041050001610	TRANSISTOR MMBT3904LT1 SMD T	Q26	1
402	M	041050002610	TRANSISTOR MMBT3906LT1 SMD	Q27	1
403	M	041000002106	TRANSISTOR 2SA673AC TO-92 T	Q28	1
404	M	041020003106	TRANSISTOR 2SC1213AC TO-92 T	Q29	1
405	M	013027031858	RES. CF 270Kohm 1/8W J 0805	RP04	1
406	M	013301580152	RES. MOF(M) 0.15ohm 1W J A-FK	RP05	1
407	M	013301580152	RES. MOF(M) 0.15ohm 1W J A-FK	RP06	1
408	M	013051001858	RES. CF 510ohm 1/8W J 0805	RP08	1

COMPLETE PARTS LIST

MODULE NO. 3174-0012-0150 LCD MAIN BD ASS'Y					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
409	M	013010011858	RES. CF 1.0Kohm 1/8W J 0805	RP09	1
410	M	013047011858	RES. CF 4.7Kohm 1/8W J 0805	RP10	1
411	M	013015011858	RES. CF 1.5Kohm 1/8W J 0805	RP11	1
412	M	013010081859	RES. CF 1.0ohm 1/8W J 1206	RP13	1
413	M	013012011858	RES. CF 1.2Kohm 1/8W J 0805	RP14	1
414	M	013036011858	RES. CF 3.6Kohm 1/8W J 0805	RP15	1
415	M	013043021858	RES. CF 43Kohm 1/8W J 0805	RP502	1
416	M	013110001818	RES. MF 100ohm 1/8W F 0805	R01	1
417	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R02	1
418	M	013110001818	RES. MF 100ohm 1/8W F 0805	R03	1
419	M	013022091858	RES. CF 22ohm 1/8W J 0805	R04	1
420	M	013027001858	RES. CF 270ohm 1/8W J 0805	R05	1
421	M	013022091858	RES. CF 22ohm 1/8W J 0805	R06	1
422	M	013027011858	RES. CF 2.7Kohm 1/8W J 0805	R07	1
423	M	013010091858	RES. CF 10ohm 1/8W J 0805	R08	1
424	M	013047011858	RES. CF 4.7Kohm 1/8W J 0805	R09	1
425	M	013047011858	RES. CF 4.7Kohm 1/8W J 0805	R103	1
426	M	013047091858	RES. CF 47ohm 1/8W J 0805	R105	1
427	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R106	1
428	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R107	1
429	M	013110001818	RES. MF 100ohm 1/8W F 0805	R11	1
430	M	013047011858	RES. CF 4.7Kohm 1/8W J 0805	R110	1
431	M	013022001858	RES. CF 220ohm 1/8W J 0805	R111	1
432	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R114	1
433	M	013022091858	RES. CF 22ohm 1/8W J 0805	R116	1
434	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R117	1
435	M	013047011858	RES. CF 4.7Kohm 1/8W J 0805	R118	1
436	M	013022011858	RES. CF 2.2Kohm 1/8W J 0805	R119	1
437	M	013039011858	RES. CF 3.9Kohm 1/8W J 0805	R12	1
438	M	013027001858	RES. CF 270ohm 1/8W J 0805	R121	1
439	M	013027001858	RES. CF 270ohm 1/8W J 0805	R122	1

COMPLETE PARTS LIST

MODULE NO. 3174-0012-0150 LCD MAIN BD ASS'Y					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
440	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R123	1
441	M	013010091858	RES. CF 10ohm 1/8W J 0805	R124	1
442	M	013022091858	RES. CF 22ohm 1/8W J 0805	R125	1
443	M	013022091858	RES. CF 22ohm 1/8W J 0805	R126	1
444	M	013010001858	RES. CF 100ohm 1/8W J 0805	R127	1
445	M	013005081859	RES. CF 0.5ohm 1/8W J 1206	R130	1
446	M	013047001858	RES. CF 470ohm 1/8W J 0805	R131	1
447	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R132	1
448	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R133	1
449	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R136	1
450	M	013022011858	RES. CF 2.2Kohm 1/8W J 0805	R137	1
451	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R138	1
452	M	013010091858	RES. CF 10ohm 1/8W J 0805	R139	1
453	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R14	1
454	M	013022091858	RES. CF 22ohm 1/8W J 0805	R140	1
455	M	013020001858	RES. CF 200ohm 1/8W J 0805	R141	1
456	M	013022091858	RES. CF 22ohm 1/8W J 0805	R142	1
457	M	013010091858	RES. CF 10ohm 1/8W J 0805	R143	1
458	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R149	1
459	M	013022011858	RES. CF 2.2Kohm 1/8W J 0805	R150	1
460	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R151	1
461	M	013022021858	RES. CF 22Kohm 1/8W J 0805	R152	1
462	M	013022021858	RES. CF 22Kohm 1/8W J 0805	R153	1
463	M	013030011858	RES. CF 3.0Kohm 1/8W J 0805	R154	1
464	M	013047011858	RES. CF 4.7Kohm 1/8W J 0805	R155	1
465	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R156	1
466	M	013022091858	RES. CF 22ohm 1/8W J 0805	R157	1
467	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R158	1
468	M	013015021858	RES. CF 15Kohm 1/8W J 0805	R160	1
469	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R161	1
470	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R162	1

COMPLETE PARTS LIST

MODULE NO. 3174-0012-0150 LCD MAIN BD ASS'Y					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
471	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R163	1
472	M	013082021858	RES. CF 82Kohm 1/8W J 0805	R164	1
473	M	013033011858	RES. CF 3.3Kohm 1/8W J 0805	R165	1
474	M	037000002143	CHIP BEAD CORE 600ohm 1608M T	R167	1
475	M	013022091858	RES. CF 22ohm 1/8W J 0805	R168	1
476	M	013022091858	RES. CF 22ohm 1/8W J 0805	R169	1
477	M	013022091858	RES. CF 22ohm 1/8W J 0805	R171	1
478	M	037000002143	CHIP BEAD CORE 600ohm 1608M T	R172	1
479	M	013075001858	RES. CF 750ohm 1/8W J 0805	R173	1
480	M	013033011858	RES. CF 3.3Kohm 1/8W J 0805	R174	1
481	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R175	1
482	M	013056011858	RES. CF 5.6Kohm 1/8W J 0805	R176	1
483	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R177	1
484	M	013022011858	RES. CF 2.2Kohm 1/8W J 0805	R178	1
485	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R179	1
486	M	013110001818	RES. MF 100ohm 1/8W F 0805	R18	1
487	M	013022011858	RES. CF 2.2Kohm 1/8W J 0805	R180	1
488	M	013047011858	RES. CF 4.7Kohm 1/8W J 0805	R184	1
489	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R185	1
490	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R186	1
491	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R187	1
492	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R188	1
493	M	013075011858	RES. CF 7.5Kohm 1/8W J 0805	R189	1
494	M	013047011858	RES. CF 4.7Kohm 1/8W J 0805	R19	1
495	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R190	1
496	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R191	1
497	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R192	1
498	M	013033011858	RES. CF 3.3Kohm 1/8W J 0805	R193	1
499	M	013010091859	RES. CF 10ohm 1/8W J 1206	R195	1
500	M	013010011858	RES. CF 1.0Kohm 1/8W J 0805	R196	1
501	M	013022091858	RES. CF 22ohm 1/8W J 0805	R197	1

COMPLETE PARTS LIST

MODULE NO. 3174-0012-0150 LCD MAIN BD ASS'Y					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
502	M	013022091858	RES. CF 22ohm 1/8W J 0805	R198	1
503	M	013022091858	RES. CF 22ohm 1/8W J 0805	R20	1
504	M	013010011858	RES. CF 1.0Kohm 1/8W J 0805	R200	1
505	M	013047011858	RES. CF 4.7Kohm 1/8W J 0805	R201	1
506	M	013047091858	RES. CF 47ohm 1/8W J 0805	R203	1
507	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R204	1
508	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R205	1
509	M	037000003732	CHIP BEAD CORE 40ohm (FCM2012C-400T07)	R206	1
510	M	013022091858	RES. CF 22ohm 1/8W J 0805	R208	1
511	M	013047091858	RES. CF 47ohm 1/8W J 0805	R209	1
512	M	013047091858	RES. CF 47ohm 1/8W J 0805	R21	1
513	M	013010011858	RES. CF 1.0Kohm 1/8W J 0805	R210	1
514	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R212	1
515	M	013010011858	RES. CF 1.0Kohm 1/8W J 0805	R213	1
516	M	013047011858	RES. CF 4.7Kohm 1/8W J 0805	R214	1
517	M	013015091859	RES. CF 15ohm 1/8W J 1206	R215	1
518	M	013013011858	RES. CF 1.3Kohm 1/8W J 0805	R216	1
519	M	013033011858	RES. CF 3.3Kohm 1/8W J 0805	R217	1
520	M	037000004752	Chip Bead Core 40ohm (MLB-201209-0040P-N1)	R22	1
521	M	013010091858	RES. CF 10ohm 1/8W J 0805	R220	1
522	M	013022091858	RES. CF 22ohm 1/8W J 0805	R221	1
523	M	013047001858	RES. CF 470ohm 1/8W J 0805	R222	1
524	M	013022081250	RES. CF 2.2ohm 1/2W J A	R223	1
525	M	013022021858	RES. CF 22Kohm 1/8W J 0805	R227	1
526	M	013010031858	RES. CF 100Kohm 1/8W J 0805	R23	1
527	M	013047011850	RES. CF 4.7Kohm 1/8W J A	R230	1
528	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R231	1
529	M	013033001858	RES. CF 330ohm 1/8W J 0805	R26	1
530	M	013030011858	RES. CF 3.0Kohm 1/8W J 0805	R27	1
531	M	013010011858	RES. CF 1.0Kohm 1/8W J 0805	R28	1
532	M	037000003732	CHIP BEAD CORE 40ohm (FCM2012C-400T07)	R29	1

COMPLETE PARTS LIST

MODULE NO. 3174-0012-0150 LCD MAIN BD ASS'Y					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
533	M	013027001858	RES. CF 270ohm 1/8W J 0805	R31	1
534	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R32	1
535	M	013110001818	RES. MF 100ohm 1/8W F 0805	R33	1
536	M	013010001858	RES. CF 100ohm 1/8W J 0805	R34	1
537	M	013010001858	RES. CF 100ohm 1/8W J 0805	R35	1
538	M	013015001858	RES. CF 150ohm 1/8W J 0805	R36	1
539	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R37	1
540	M	013110001818	RES. MF 100ohm 1/8W F 0805	R39	1
541	M	013115001818	RES. MF 150ohm 1/8W F 0805	R40	1
542	M	013115001818	RES. MF 150ohm 1/8W F 0805	R41	1
543	M	013115001818	RES. MF 150ohm 1/8W F 0805	R42	1
544	M	013147501818	RES. MF 475ohm 1/8W F 0805	R43	1
545	M	013022011858	RES. CF 2.2Kohm 1/8W J 0805	R45	1
546	M	013010091858	RES. CF 10ohm 1/8W J 0805	R46	1
547	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R47	1
548	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R48	1
549	M	013022091858	RES. CF 22ohm 1/8W J 0805	R50	1
550	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R51	1
551	M	013033011858	RES. CF 3.3Kohm 1/8W J 0805	R52	1
552	M	013147501818	RES. MF 475ohm 1/8W F 0805	R53	1
553	M	013147501818	RES. MF 475ohm 1/8W F 0805	R54	1
554	M	013115001818	RES. MF 150ohm 1/8W F 0805	R55	1
555	M	013115001818	RES. MF 150ohm 1/8W F 0805	R56	1
556	M	013110001818	RES. MF 100ohm 1/8W F 0805	R57	1
557	M	013127401818	RES. MF 274ohm 1/8W F 0805	R58	1
558	M	013110001818	RES. MF 100ohm 1/8W F 0805	R59	1
559	M	013127401818	RES. MF 274ohm 1/8W F 0805	R60	1
560	M	013022091858	RES. CF 22ohm 1/8W J 0805	R600	1
561	M	013022001858	RES. CF 220ohm 1/8W J 0805	R601	1
562	M	013010011858	RES. CF 1.0Kohm 1/8W J 0805	R604	1
563	M	013000001858	RES. CF 0.0ohm 1/8W J 0805	R605	1

COMPLETE PARTS LIST

MODULE NO. 3174-0012-0150 LCD MAIN BD ASS'Y					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
564	M	013110001818	RES. MF 100ohm 1/8W F 0805	R61	1
565	M	013127401818	RES. MF 274ohm 1/8W F 0805	R62	1
566	M	013022091858	RES. CF 22ohm 1/8W J 0805	R65	1
567	M	013047081859	RES. CF 4.7ohm 1/8W J 1206	R66	1
568	M	013047091858	RES. CF 47ohm 1/8W J 0805	R69	1
569	M	013047091858	RES. CF 47ohm 1/8W J 0805	R70	1
570	M	013047011858	RES. CF 4.7Kohm 1/8W J 0805	R71	1
571	M	013115001818	RES. MF 150ohm 1/8W F 0805	R72	1
572	M	037000002143	CHIP BEAD CORE 600ohm 1608M T	R73	1
573	M	037000002143	CHIP BEAD CORE 600ohm 1608M T	R76	1
574	M	013075001858	RES. CF 750ohm 1/8W J 0805	R77	1
575	M	013047091858	RES. CF 47ohm 1/8W J 0805	R78	1
576	M	013010011858	RES. CF 1.0Kohm 1/8W J 0805	R80	1
577	M	013075001858	RES. CF 750ohm 1/8W J 0805	R81	1
578	M	013033011858	RES. CF 3.3Kohm 1/8W J 0805	R82	1
579	M	013047091858	RES. CF 47ohm 1/8W J 0805	R83	1
580	M	013022091858	RES. CF 22ohm 1/8W J 0805	R84	1
581	M	013010091859	RES. CF 10ohm 1/8W J 1206	R85	1
582	M	013005081859	RES. CF 0.5ohm 1/8W J 1206	R86	1
583	M	013022091858	RES. CF 22ohm 1/8W J 0805	R87	1
584	M	013010011858	RES. CF 1.0Kohm 1/8W J 0805	R89	1
585	M	013010021858	RES. CF 10Kohm 1/8W J 0805	R91	1
586	M	013047011858	RES. CF 4.7Kohm 1/8W J 0805	R95	1
587	M	015150111001	SVR M/LAYER/B 500ohm B 6	VR01	1
588	M	030012003150	D-SUB FEMALE 90' 15P 3ROW	W01	1
589	M	045120000464	WAFER 2.00MM 4P 90' KINK	W02	1
590	M	045120000964	WAFER 2.00MM 9P 90' KINK	W04	1
591	M	045120000564	WAFER 2.00MM 5P 90' KINK	W05	1
592	M	030012003150	D-SUB FEMALE 90' 15P 3ROW	W06	1
593	M	030180000801	Conn. B to B FX8C 80P F.M (FX8C-80S-SV)	W07	1
594	M	030211300043	DC Power Jack 4P 13 φ 7.5A (UT-AC02-4S-S)	W10	1

COMPLETE PARTS LIST

MODULE NO. 3174-0012-0150 LCD MAIN BD ASS'Y					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
595	M	171206000070	COPPER CLAMP	W10C	1
596	M	028011000013	X'TAL 11.0592MHZ	XR02	1
597	M	040005212000	ZENER 6A1 5.2-5.5V 1/2W	ZD04	1
598	M	040005212000	ZENER 6A1 5.2-5.5V 1/2W	ZD05	1
599	M	040005212000	ZENER 6A1 5.2-5.5V 1/2W	ZD06	1
600	M	040004912000	ZENER 5C1 4.9-5.1V 1/2W	ZD07	1
601	M	040005112000	ZENER 5C3 5.1-5.3V 1/2W	ZD10	1

MODULE NO. 3174-0012-0156 LCD DISPLAY BD ASS'Y					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
602	M	044050000020	LED L-59GYW 5 φ	LED01	1
603	M	170115000100	LED HOLDER 3PIN/LED 4X3A	LED01N	1
604	M	017017400291	PCB DISPLAY BD 145*26.75*1.6t VO S	PCB01	1
605	M	022070200484	SW TACTILE 8*8mm 6P (TS-808A)	SW1	1
606	M	022070200181	SW TACTILE 6*6MM HDK-612A	SW2	1
607	M	022070200181	SW TACTILE 6*6MM HDK-612A	SW3	1
608	M	022070200181	SW TACTILE 6*6MM HDK-612A	SW4	1
609	M	022070200181	SW TACTILE 6*6MM HDK-612A	SW5	1
610	M	045120000964	WAFER 2.00MM 9P 90' KINK	W1	1

MODULE NO. 3174-0012-0305 LCD REAR COVER ASS'Y					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
611	M	170102012003	REAR COVER CAB.	RC01	1
612	M	171201000412	MOUNTING BRACKET	RC02	1
613	M	171201000460	LOCK COVER	RC03	1

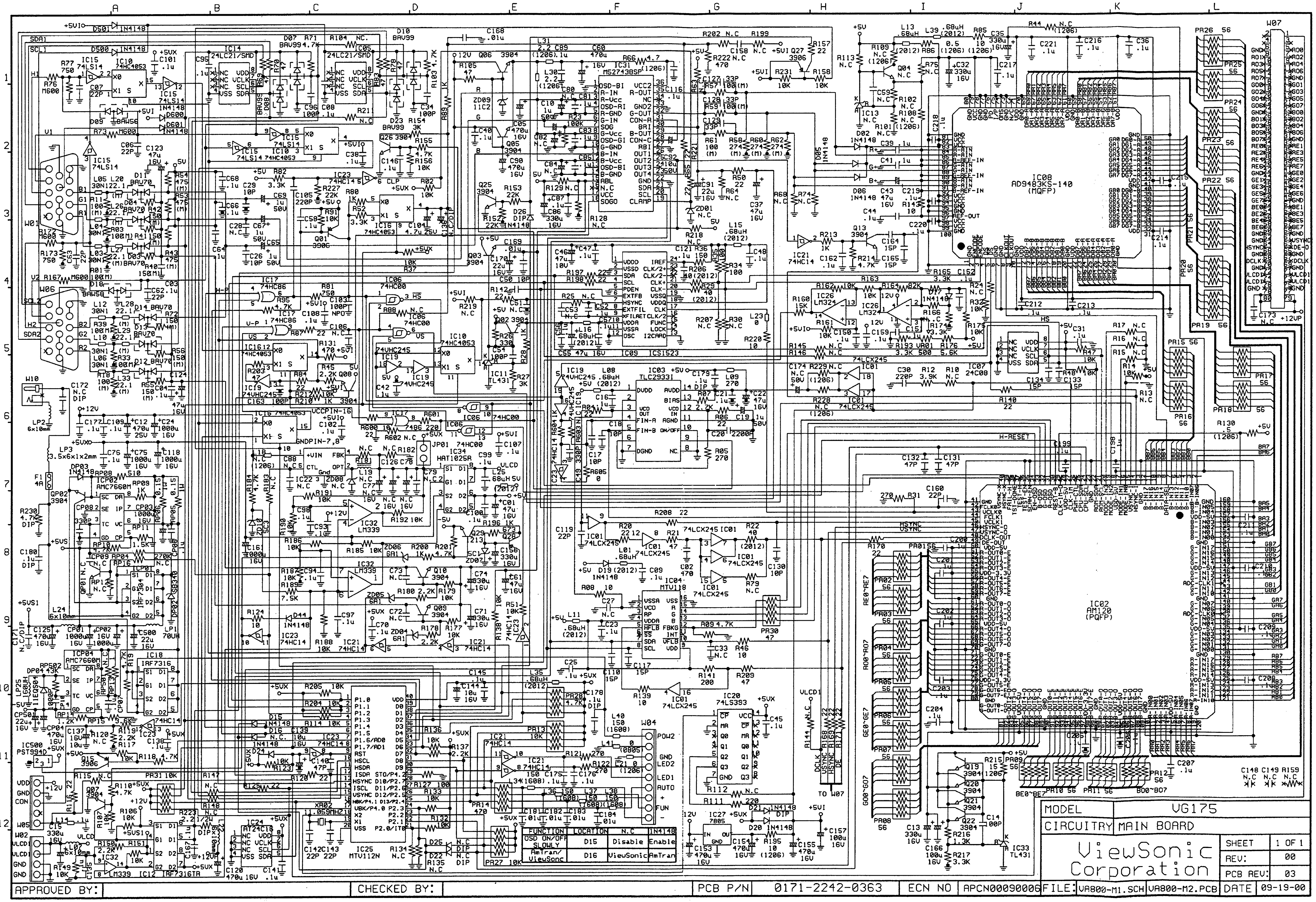
COMPLETE PARTS LIST

MODULE NO. 3180-0022-0339 LCD INVERTER SHIELD ASS'Y					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
614	M	171205000242	SHIELD FOR INVERTER	IS01	1
615	M	170109000030	INSULATOR FOR INV.-A	IS01M	1

MODULE NO. 3174-0032-0150 LCD MAIN BD ASS'Y					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
616	M	011131015105	C/M Multi. 100PF 50V NPO 0805	C59	1
617	M	039050001052	GEN. DIODE 1N4148 T	D22	1
618	M	043080007857	IC SCL8483 SMD 100PIN (MQFP)	IC08	1
619	M	043060004307	IC TL431CZ TO-92 T	IC13	1
620	M	013000001858	RES. CF 0.0ohm 1/8W J 0805	L39	1
621	M	041050001610	TRANSISTOR MMBT3904LT1 SMD T	Q04	1
622	M	013022011858	RES. CF 2.2Kohm 1/8W J 0805	R101	1
623	M	013010011858	RES. CF 1.0Kohm 1/8W J 0805	R102	1
624	M	013000001859	RES. CF 0.0ohm 1/8W J 1206	R109	1
625	M	013047091858	RES. CF 47ohm 1/8W J 0805	R113	1
626	M	013000001858	RES. CF 0.0ohm 1/8W J 0805	R75	1
627	M	039050001053	GEN. DIODE 1N4148 SMD	R85	1

MODULE NO. 3174-0032-0331 LCD PANEL ASS'Y (VG175)					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
628	M	170101065021	FRONT PANEL CAB. PC+ABS G7397	FP01	1

MODULE NO. 3174-0032-0312 LCD PACKING ASS'Y (VG175)					
NO	M/S	PART NO	DESCRIPTION	LOC	Q'TY
629	M	192512001990	CARTON V.SONIC VG175	PA07	1
630	M	192513002050	MANUAL V.SONIC VG175	PA08	1
631	M	193611002260	B/C LBL V.SONIC VG175	PA10	1



IC08 AD9483KS-140 (MQFP)
IC02 AM120 (PQFP)
IC31 M52743BSP
IC09 ICS1523
IC03 TLC2933I
IC04 MTV118
IC25 MTV112N
IC20 74LS393
IC07 24C08
IC14 24LC21/SMD
IC05 24LC21/SMD
IC10 74HC4053
IC16 74HC4053
IC15 74LS14
IC17 74HC86
IC06 74HC00
IC19 74VHC245
IC01 74LCX245
IC21 74HC14
IC23 74HC14
IC26 LM324
IC32 LM339
IC34 HAT1025R
IC11 TL431
IC33 TL431
IC27 7805
IC24 AT24C16
IC18 IRF7316
IC12 IRF7316TR
ICP01 IRF7304
ICP02 AMC7660M
ICP04 AMC7660M
IC500 PST994D
W01
W06
W04
W07
W10
FUNCTION | LOCATION | N.C | 1N4148
OSD ON/OFF SLOWLY | D15 | Disable | Enable
AmTran/ ViewSonc | D16 | ViewSonic | AmTran
MODEL VG175
CIRCUITRY MAIN BOARD
ViewSonic Corporation
SHEET 1 OF 1
REV: 00
PCB REV: 03
APPROVED BY:
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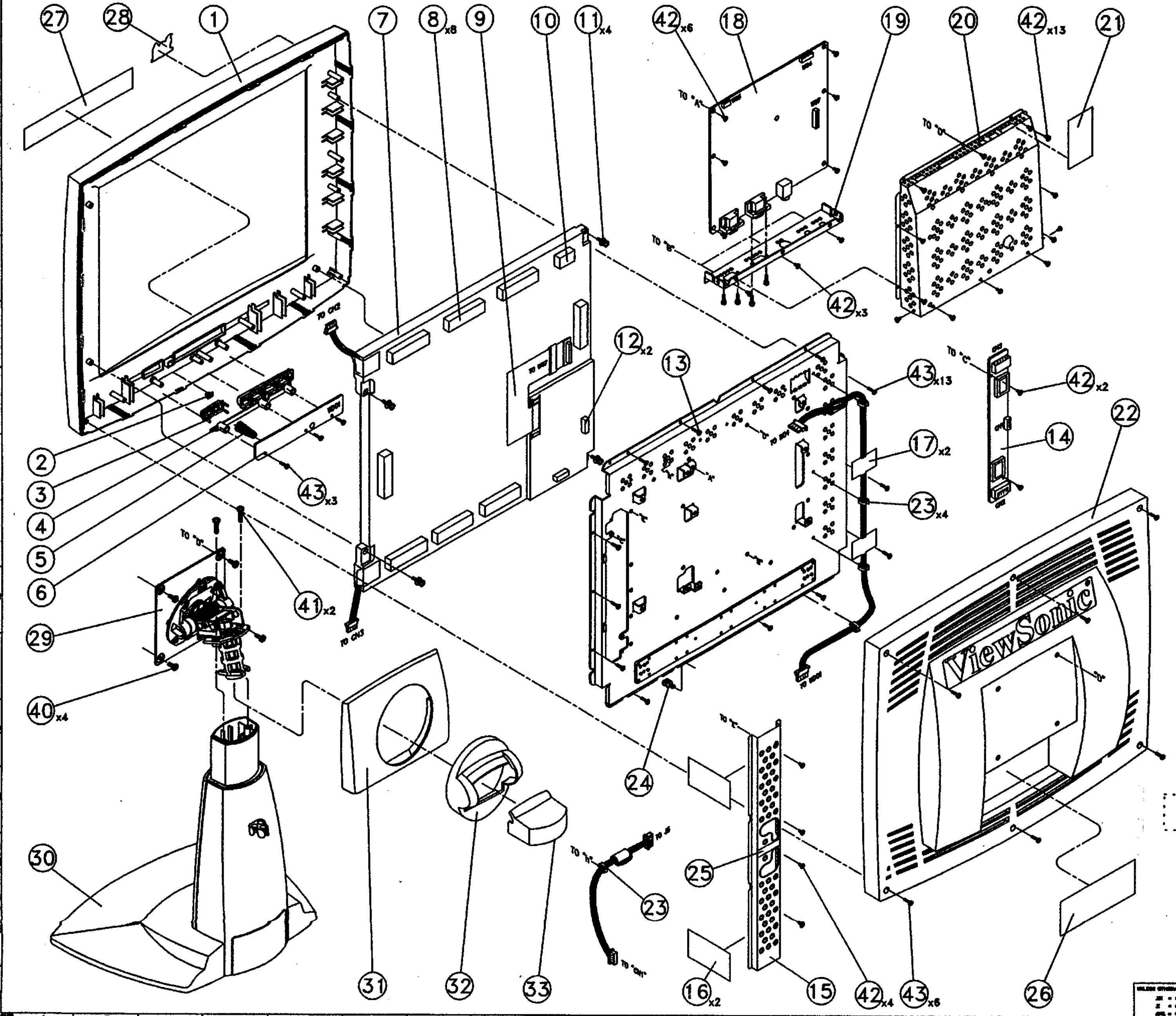
DATE 09-19-00



ITEM	PART NO.	DESCRIPTION	QTY
1	1701-0106-5010	FRONT PANEL CAB.(VA800)	1
2	1701-0700-0050	LED LENS	1
3	1701-0400-2000	POWER BUTTON (VA800)	1
4	1701-0400-1000	FUNCTION BUTTON (VA800)	1
5	1712-0700-0050	SPRING (VP180M)	1
6	3174-0012-0150	LCD 17.4" DISPLAY BD ASS'Y	1
7	0211-0174-0165	LCD MODULE 17.4" TFT FLC44SXC8V FUJ.	1
8	1947-1700-0280	GASKET BLOCK (10.0*10.5*80.0mm)	8
9	0460-2900-0261	WN FPCB 60-60P 106.3*110.5mm 1/12	1
10	1947-1700-0190	GASKET BLOCK (20.0*10.0*10.0)	1
11	1720-0503-1210	MAC. SCREW-MBSFW M3.0*12.0L,Zn-Cr	4
12	1947-1700-0270	GASKET BLOCK (7.0*4.0*20.0mm)	2
13	1712-0100-1460	FRAME BRACKET (VA800)	1
14	0500-0101-0190	INVERTER DC-AC (TAD506)	1
15	3180-0022-0330	SHIELD FOR INVERTER	1
16	1947-1700-0050	SHIELDING AL. TAPE(50.0X40.0)	2
17	1947-1700-0020	SHIELDING AL. TAPE(45.0X25.0)	2
18	3174-0012-0180	LCD 17.4" MAIN BD ASS'Y (VA800)	1
19	1712-0100-1470	SUPPORT BKT FOR M/B (VA500)	1
20	1712-0500-0470	SHIELD FOR M/B(VA800)	1
21	1947-1700-0130	SHIELDING AL. TAPE(70.0X50.0)	1
22	3174-0012-0306	REAR COVER CAB.(VSC-18")	1
23	1701-1500-0030	WIRE SADDLE (CH-01C)	5
24	1701-1500-0180	SPACER SUPPORT (DCBS-5)	1
25	1930-1500-0300	HI-VOLTAGE LBL	1
26	1938-1100-2370	B/C LBL VA800 FOR USA	1
27	1936-1900-0120	POP LBL V.SONIC VA800	1
28	1936-1000-0060	V. SONIC LOGO-8 (AL PLATE)	1
29	3180-0012-0025	PIVOT PLATE ASS'Y (VG181)	1
30	3180-0012-0014	NECK-BASE ASS'Y (VG181)	1
31	1701-0503-8000	REAR HOUSING HOLDER (VG181)	2
32	1701-0503-7000	REAR HOUSING CAP (VG181)	1
33	1701-0503-6000	SWIVEL CAP (VG181)	1
40	1720-5004-1020	MAC. SCREW-MI M4.0*10.0L,Ni	4
41	1721-1004-2010	TAP. SCREW-TP ø4.0*20.0L,Zn-Cr	2
42	1720-0003-0410	MAC. SCREW-MB M3.0*4.0L,Zn-Cr	28
43	1721-0003-1020	TAP. SCREW-TB ø3.0*10.0L,Ni	22

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17.4" CASE ASS'Y